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FARM TECHNOLOGICAL ADVANCE AND TOTAL POPULATION GROWTH

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Bureau of Agricultural Economics

DURING the past quarter century the relationship of American agriculture to our total economy has been undergoing a revolutionary change, the full nature and implications of which are just beginning to be comprehended. The rate of gain of productivity of farm workers overtook the rate of population growth so that the age-old pressure of population upon the food supply changed skins and became the pressure of the food supply upon the population. Each year scientific agriculture increased a farm plant capacity already in excess of the Nation's food and fiber requirements, after allowing for substantial underconsumption resulting from lack of purchasing power on the part of low income groups. Farm employment reached its peak about 1910 and began a downward slide.

This does not mean that agriculture has become a contracting industry in terms of food and fiber output capacity. Quite the contrary. It means that a larger and larger production in line with society's food and fiber requirements provides effective employment for fewer and fewer farm workers. By 1944 farm production was the largest in our history but fewer people were engaged in farming than at any other time since about 1875. While the war has accelerated this increase in productive capacity on the one hand and occupational decline on the other, pressure for further change in this direction was already well on foot by the 20's and has been gathering head ever since with no prospect of abatement in the predictable future; war or peace, prosperity or depression notwithstanding.

I

Food and fiber output capacity must expand with population growth but whether farm plant employment capacity expands or contracts depends primarily upon the comparative rates of increase of the domestic population and technological advance as reflected in farm labor productivity. This condition arises from the fact that within the foreseeable future neither foreign markets nor new uses of farm products nor increased per capita food consumption appear to offer outlets for such enlarged outputs of food and fiber as would require a greater number of farms and farm workers.

Except for the temporary influence of World Wars I and II, the export market for farm products has been declining since 1900; very rapidly in the 20's, and especially so in the 30's. For example, farm exports for 1925–29 required on the annual average approximately 50 million acres as compared with about 23 million for 1935–39, a decline of over 50 percent.[1] During the war, lend-lease and military requirements have absorbed about 20 percent of farm output, but this outlet will diminish as war-torn countries get on their feet. Maintenance of prewar levels of agricultural exports is about as much as can be expected when it is taken into account that science and technology are being increasingly applied to farming on a world-wide scale. As this is done other nations become less and less dependent upon American farms, even after due allowance is made for more favorable trade relations in terms of the principle of comparative advantage. In postwar years it is generally assumed that farm exports may be as much as one-seventh of the total farm production, provided we have full employment; otherwise the proportion is likely to be smaller owing to diminished foreign purchasing power arising from our contracting imports.

New outlets for farm products as industrial raw materials appear limited. Only a fraction of the total farm output is now used in this manner. The stomach is by all odds the primary consumer of farm products. Over 80 percent of the entire farm output is finally used as food, exclusive of tobacco products and beverages of all sorts. Another 5 percent goes into clothing. Probably less than 10 percent is used as industrial raw materials. Thus while the possibility of greatly expanded industrial uses of farm products must be kept in

[1] Estimated on the basis of average U. S. yields for each commodity in each period.

mind, the fact remains that there is "little sign that potential uses of this kind offer a field in which they can effectively compete with cheaper substances."[2]

Increased per capita food consumption offers little ground for such expanded production as to require more farm workers. While there is great variability in the amount of any particular food which a person may want, depending primarily upon its price and his income, the total amount of food which one can use soon reaches a saturation point; nor can consumption fall much below the maximum lest starvation set in. As a result, per capita consumption varies only slightly over long periods of time. For example, from 1909 to 1939 the average per capita daily food consumption was 4.96 pounds and in no year, depression or prosperity, did this average fall below 4.69 pounds or rise above 5.18 pounds.[3] The 1935–39 per capita average of food products was approximately 4.91 pounds—a depression period in which there was marked underconsumption on the part of low income groups.

The margin of underconsumption arising from limited purchasing power represents about the extent to which farm production may be expanded per capita. It has been estimated that during the depression years of 1935 to 1939 per capita food consumption was around 15 percent less than it would have been under full employment conditions.[4] Having once reached this maximum, then, except for imponderable changes in food habits, per capita consumption would offer no additional outlet for increased farm production.[5] At present, lend-lease and military requirements do not permit this high level of consumption but the farm plant is now producing about at this point. Obviously, lack of purchasing power should be removed as a barrier to adequate food consumption regardless of how successful we may be in maintaining full employment. But even if everyone had all the food he could use

[2] Barger and Landsberg: American Agriculture, 1899–1939, p. 309.

[3] *Ibid.*, Table 21, p. 151.

[4] Cavin, J. P.: "The General Food Situation," U. S. Department of Agriculture, Bureau of Agricultural Economics, Address at 22nd Annual Agricultural Outlook Conference, Washington, D. C., November 14, 1944.

[5] Changes in dietary habits under the influence of full employment and better knowledge of proper nutrition might increase farm employment opportunities without increasing the average number of pounds of food consumed per person. For example, a much greater proportion of fruits and vegetables might affect somewhat the total input of required farm labor even though the volume of agricultural production per capita as measured in pounds might not be altered. It is felt, however, that such eventualities would not materially disturb the present argument.

this increase in per capita consumption would not call for any new expansion in our farm plant.

It may be observed that expanding per capita consumption offers great possibilities for expanding total employment, but not farm employment. Any particular appetite or want has its satiation point, but the total number of wants is ever expanding; at least this is generally assumed to be the case. Farming primarily produces for a single appetite while non-farming industries as a whole provide for an ever expanding number of wants. Moreover, the food appetite is primary in that it must be fairly well satisfied at all times lest the individual perish, whereas many other wants may be virtually foregone without similar disaster.

Exports, industrial uses, and per capita food consumption are all likely to diminish in case of a depression. While they will expand under a full employment economy, it is unlikely that the most favorable conditions will require more farms and farm workers. Thus, population growth remains as the chief outlet for expanding farm production. More precisely, owing to the relatively constant per capita food and fiber requirement, the rate at which aggregate farm output capacity may expand stands in fairly direct proportion to the rate of population change (after allowing for exports and industrial uses). Therefore, so long as our population continues to increase the Nation will require a larger and larger farm output capacity but it does not follow that more farm workers will be required. It is quite possible that a growing society may require an expanding farm output capacity on the one hand and a diminishing number of farm families on the other hand. In great measure the nub of the matter turns on the question of whether the rate of technological advance as reflected in farm labor productivity is faster or slower than the rate of total population growth.

II

The relatively constant per capita food and fiber requirement thus makes the comparative rates of technological advance in agriculture and total population growth of major importance to the occupational role of the farm plant in the total economy, even when industrial uses and exports of farm products are expanding and especially so when these outlets are fairly stable and limited. Over a long period of time a change in the relationship of these rates has unraveled three important occupational consequences, the

last of which is just now well upon us and has caught us ill prepared.

The proportion of persons engaged in non-farm occupations must necessarily increase. Roughly speaking, in countries unaffected by modern technology about 90 percent of the population is engaged in farming. In all countries where scientific farming has taken hold, the proportion has declined. In America from 1870 to 1940 farm workers as a proportion of all workers have declined from over 50 to less than 20 percent of the total population. During approximately the same period, there were similar declines in Sweden, Japan, and Germany.[6]

TABLE I. CHANGE IN FARM LABOR FORCE, AGRICULTURAL PRODUCTION, FARM WORKER PRODUCTIVITY, AND TOTAL POPULATION GROWTH, 1870–1940
(1870 = 100 for all indexes)

Year	Farm labor force (Persons 10 yrs. old & over)			Agricultural production		Productivity per worker		Total population		
	Number[1]	Index	Percent change[2]	Index[3]	Percent change[2]	Index	Percent change[2]	Number[4]	Index	Percent change[2]
1870	6,849,772	100	—	100	—	100	—	38,558,371	100	—
1880	8,584,810	125	25	152	52	122	22	50,155,783	130	30
1890	9,938,373	145	16	190	25	131	7	62,947,714	163	26
1900	10,911,998	159	10	242	27	152	16	75,994,575	197	21
1910	11,591,767	169	6	276	15	163	7	91,972,226	239	21
1920	11,448,770	167	− 1	304	10	182	12	105,710,620	274	15
1930	10,471,998	153	− 9	338	11	221	21	122,775,046	318	16
1940	9,102,574	134	−13	378	12	282	28	131,669,275	341	7

[1] U. S. Bureau of the Census, *Population* (Sixteenth Census of the U. S.), Series P-9, No. 11, December 8, 1944.
[2] From preceding decade.
[3] For 1870, 3-yr. average centered on year indicated. For other years, 5-yr. averages similarly centered. Data since 1909 are derived from BAE index of volume of agricultural production for sale and for consumption in the farm home, *Agricultural Statistics 1943, U.S.D.A.* Data prior to 1909 derived from the Ideal Index computed by Frederick Strauss and Louis H. Bean, Technical Bulletin No. 703, December 1940, "Gross Farm Income and Indices of Farm Production and Prices in the United States, 1869–1937," Table 59, p. 125.
[4] U. S. Census, 1940, Series P-44, No. 21.

Yet while farm workers in America declined as a percentage of the total labor force, agriculture continued to be an occupationally expanding industry so long as the rate of population growth was faster than the rate of farm labor productivity. This was clearly the case in American agriculture until 35 years ago. From 1870 to 1910 there was a 139 percent gain in our total population as compared with only a 63 percent gain in farm worker productivity. Providing food and fiber for this larger population required more farms and farm workers, even though their labor was becoming

[6] "Memorandum on Opportunities for Occupational Adjustments in Agricultural Populations," Part II, E, p. 8, United Nations Conference on Food and Agriculture, Hot Springs, Va., May 18, 1943.

increasingly productive. While farm workers were a smaller proportion of all workers than ever before, there were 169 farm workers in 1910 for every 100 in 1870.

Under these conditions, families, once established in farming as a way of life and work, were not faced with the unheard of prospect of being heaved off the land by the effort of everyone to make two

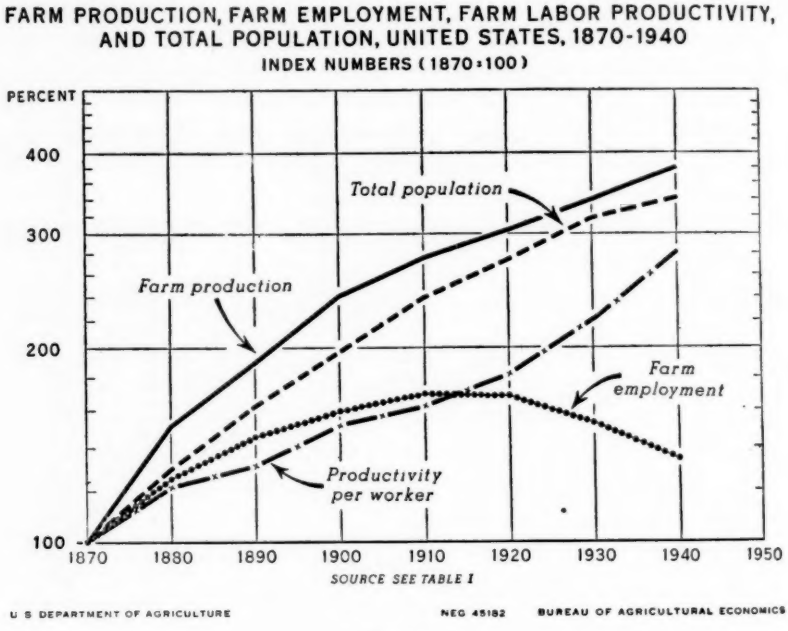

FIG. 1.

blades of grass grow where only one had grown before. In that day the farm plant was indeed a place of spreading horizons for self-employed workmen and there were rhyme and reason in keeping a weather eye upon the Nation's soil as an ever growing bundle of opportunities for a larger number of willing hands.

But all this mode of thought and practice is now brought up short. For while our increasing population still requires an expanding food and fiber output capacity, the rate of technological advance as reflected in farm labor productivity has so stepped ahead of total population growth that the great weight of society is pressing for an occupationally contracting farm plant. Even

throughout the period of farm employment expansion, the handwriting was on the wall. For though population was increasing faster than the gain in farm labor productivity, the rate of population increase was slowing down while the rate of technological advance was speeding up.

For the first time in history, gain in labor productivity appreciably outraced the rate of population increase during the 20's and became four times faster during the 30's. For every 100 workers needed in agriculture in 1930, only 79 were needed in 1940. The pressure of population upon the food supply had done an about face.

This reversal of trends is no short term affair. While rates of farm technological change (as reflected in farm labor productivity) and total population growth may some day approach similar speeds, it is fairly certain that in the predictable future the disproportionate increase in farm technological change will continue; all the while requiring an increasing farm output capacity on the one hand and a declining farm employment capacity on the other hand. Total population is still growing but, except for a temporary spurt during the present war, the rate of growth is slowing down, so much so that an absolute decline is forecast within the next fifty years.[7] On the other hand, the gain in farm labor productivity is likely to keep on outracing population growth by quite a margin. For example, after making due allowance for exports and industrial uses likely to prevail under full employment conditions and assuming no increase in labor productivity, it has been estimated that the production of a high "prosperity diet" for a 1950 population of 144 million (4.4 percent more than in 1944) would require only 5 percent more labor in farming than was used in 1944.[8] Meanwhile, it is anticipated that farm labor productivity will increase from 22 to 26 percent as a result of wider use of fertilizer and lime, new crop varieties, more feed and better care of livestock, mechanization, and other improved practices, including conservation, crop rotation, pest control, etc.[9] Consequently, in light of this relatively faster rate of productivity increase over population

[7] Thompson, Warren S. and Whelpton, P. K.: "Estimates of Future Population of the U. S., 1940 to 2000," National Resources Planning Board, August, 1943.

[8] Johnson, Sherman E.: "Production Adjustments—1945 and Post-War," U. S. Department of Agriculture, Bureau of Agricultural Economics, Address at 22nd Annual Agricultural Outlook Conference, Washington, D. C., November 14, 1944, p. 10.

[9] *Ibid.*, p. 12.

growth, providing the larger total population of 1950 with ample food and fiber will actually require fewer farm workers than we had in 1944. While forecasts of farm labor productivity gains in subsequent periods have not been made, there is no reason to suppose that they will not continue, at least for several years, as rapidly as during the prewar years. Undoubtedly the rate would be even faster under full employment conditions.

So far the argument has assumed that exports, industrial uses, and per capita consumption of farm products will continue to be relatively stable and limited. It may be observed, however, that certain information indicates a smaller number of farms and farm workers would still be in order even if farm exports and new industrial uses of agricultural products should materialize far beyond present expectations. At least a substantial reduction in farms and farm workers would not interfere with such increased production and in fact might materially contribute to it. A chief reason for this is that a large proportion of the Nation's farms are so small in working resources as to be unable to utilize the more productive practice already established on more adequate units.

Some 1.2 million tracts enumerated as farms by the 1940 Census may be disregarded as a part of the productive agricultural plant because their resources and output were negligible. Of the remainder it has been estimated that there were some 91 thousand large-scale farms, 1,584 thousand farm units, with enough land, equipment, livestock, and other working capital to provide effective employment for operating families; and 3,182 thousand farms (52.2 percent of all units) on which resources appear so limited as to provide very ineffective employment opportunities.

In terms of value a man on the average adequate unit had three times as much land and buildings as the man on the average inadequate unit and, as measured by the total value of output, his work was 2.4 times as productive. He had 1.7 times as many total acres and 2.2 times as many crop acres. Apparently the quality of land was about the same in both cases because there was only a small difference in the total value of output per acre harvested, although poorer land on smaller farms may have been as productive because it was farmed more intensively.

Were the national farm plant organized so as to enable families on 3,182 thousand inadequate units to be as productive as those

on average adequate units, these smaller farms might be replaced by approximately 1 million units. Assuming that each unit represents 5 persons, this reorganization would call for approximately a

TABLE II. ESTIMATED LABOR SUPPLY, AMOUNT OF LAND AND VALUE OF PRODUCTS, BY GROUPS OF FARMS, 1940

Class of farms	Number of farms	Number of workers	Land in farms acres	Cropland harvested acres	Value land and buildings	Total value of products
	(000)	(000)	(000,000)	(000.000)	(000,000)	(000,000)
A. Numbers and Values						
U. S.	6,097	9,694	1,061	321	$33,642	$ 7,814
Large-scale[1]	91	550	260	26	5,096	1,501
Adequate[2]	1,584	3,300	400	175	17,863	3,835
Inadequate[3]	3,182	4,544	331	109	7,955	2,230
Nominal[4]	1,240	1,300	70	11	2,728	248
B. Average Per Farm						
U. S.	—	1.6	174	53	5,518	1,282
Large-scale	—	6.0	2,857	286	56,000	16,500
Adequate	—	2.2	253	110	11,277	2,421
Inadequate	—	1.4	104	34	2,500	700
Nominal	—	1.0	56	9	2,200	250
C. Average Per Worker						
U. S.	—	—	109	33	3,370	806
Large-scale	—	—	473	47	9,265	2,729
Adequate	—	—	121	53	5,413	1,162
Inadequate	—	—	73	24	1,751	491
Nominal	—	—	54	8	2,098	191
D. Percent of Total						
U. S.	100.0	100.0	100.0	100.0	100.0	100.0
Large-scale	1.5	5.7	24.5	8.1	15.1	19.2
Adequate	26.0	34.0	37.7	54.5	53.1	49.1
Inadequate	52.2	46.9	31.2	34.0	23.6	28.5
Nominal	20.3	13.4	6.6	3.4	8.1	3.2

Source: Based in part on U. S. Department of Commerce, Bureau of the Census, and the U. S. Department of Agriculture, Bureau of Agricultural Economics, a cooperative study, Technical Monograph, "Analysis of Specified Farm Characteristics for Farms Classified by Total Value of Products," Table 1, p. 30 and Table 1, p. 102. Cropland harvested and value of products are for 1939. Number of workers is for March 24–30, 1940.

[1] Farms with a total value of product of $10,000 and over and other farms valued at $40,000 if 2 or more horses and/or tractor was reported.

[2] Remaining farms with a value of product of $1,500 or $9,999 and also farms with a lower value of product if valued at $800 to $39,999 and if 2 or more horses and/or tractor was reported.

[3] All remaining farms, except for the last class, with a value of product of less than $1,500.

[4] All farms with a value of product under $750 and no horses, mules, or tractor reported.

35 percent decline in the 1940 farm population—well over twice the actual decline (15.7 percent).[10,11]

It thus appears that even much greater productive capacity is at least consistent with a considerably greater reduction in the number of farm workers and farms, and if the capacities of *men* as well as land, fertilizer, equipment, etc., are to be used effectively, then enhanced farm output capacity is dependent upon a much smaller farm working force than is now the case.

III

As long as population growth was faster than technological change as reflected in farm labor productivity and as long as new land was easily available, total acreage in farms might increase faster than acreage per worker, thereby permitting an occupationally expanding agriculture. This condition prevailed until around 1910. For example, from 1880 to 1910 the acreage per worker increased 21 percent while total land increased 64 percent, thus permitting a 35 percent expansion of farm workers. But even though additional land were available, once farm worker productivity becomes appreciably faster than population increase, acreage per worker expands faster than total acreage, thereby mechanically squeezing an increasing number of farmers off the land.

The squeeze began operating slightly from 1910 to 1920, and has exerted increasing force ever since. During that decade, farm land per worker increased 10 percent while total acreage expanded only 8.7 percent, thus reflecting a 1.3 percent decline in the labor force. From 1920 to 1940, there was a 38 percent increase in acreage per worker but only an 11 percent acreage expansion in the national farm plant, thus reflecting a 20 percent decline of the Nation's labor force gainfully engaged in agriculture. The same principle applies to cropland.

While it may be true that only the less managerially competent get squeezed out, it should be observed that such competence has

[10] "Estimates of Farm Population and Farm Households: April, 1944, and April, 1940," Series Census-BAE, No. 1, January 14, 1945.

[11] While the present discussion is in terms of actual farms, it is recognized that nominal farms (or whatever else one may call them) are of great social importance and may become increasingly so because agriculture offers some opportunities for persons who on account of age, incapacities or handicaps of any kind, can contribute to their self-support. In like manner, part time units may become increasingly important. Information is not available, however, for a proper appraisal of such a role of land.

nothing to do with the fact of the squeeze taking place. The same thing would transpire even though all farmers were Newtons. Being equally competent would only mean that they would all bankrupt each other at about the same time.

An important reason for this more rapid increase of acreage per worker than total acreage lies in the fact that technological advance increases the land supply available for society's food and fiber requirement without adding to the total number of acres available to farmers.

TABLE III. NUMBER OF FARMS AND LAND IN FARMS, 1880–1940

Year	Number of farms	Land in farms			Cropland harvested		
		Total acres	Avg. per farm	Avg. per farm worker	Total acres	Avg. per farm	Avg. per farm worker
1880	4,008,907	536,081,835	133.7	62.4	166,186,584	41.4	19.4
1890	4,564,641	623,218,619	136.5	62.7	219,705,564	48.1	22.1
1900	5,737,372	838,591,774	146.2	76.8	282,218,280	49.2	26.0
1910	6,361,502	878,798,325	138.1	75.8	311,293,382	48.9	27.0
1920	6,448,343	955,883,715	148.2	83.4	348,548,549	54.0	30.4
1930	6,288,648	986,771,016	156.2	94.2	359,242,091	57.1	34.3
1940	6,096,799	1,060,852,374	174.0	115.0	321,242,430	52.6	35.1

Source: U. S. Department of Commerce, Bureau of the Census, 16th Census of the United States (1940), Agriculture, Vol. III, Chapter I, Table 4. Number of workers involved in columns 5 and 8 are from U. S. Census, *Population*, Series P-9, No. 11.

In the first place, by the substitution of mechanical for animal power, land (hitherto required for the workstock) is released as a human food and fiber resource. For example, from 1910 to 1940 the horse and mule population declined over 11 million on farms and some 3 million in the cities, thus releasing some 50 million acres as a human food and fiber resource.[12] In 1940 there still remained nearly 14.5 million horses and mules on farms, requiring over 50 million acres for their maintenance—enough land at prevailing yields to support nearly 23 million people. Total population is expected to reach its maximum of 167.7 million by 1980 (barring immigration and assuming medium fertility and mortality rates); an increase of some 36 million over 1940.[13] While it is unlikely that mechanization will displace all horses and mules, it may reasonably

[12] Brodell, A. P.: "Tractors Don't Eat Oats," *Land Policy Review*, August, 1941, Vol. IV, No. 8, pp. 25–28.

[13] Thompson and Whelpton, *ibid.*

be assumed that much of our population increase may be supported by land now supporting work animals.

Again, the development of higher producing plant varieties and better soil care makes a larger land supply available as a human food and fiber resource without increasing the number of acres available to farmers. This method of increasing the effective land supply has definitely come to the front only recently but will probably continue at an accelerated pace. Until the late 20's yields remained rather constant but have undergone a steady increase since then, especially from 1937 on. After allowing for weather, Shepherd has estimated that "crop yields have been increasing at the rate of nearly 1 percent a year for the past 20 years."[14] In other words, through improved soil care and higher producing varieties, the effective land supply is one-fifth larger now than in 1925. It has been estimated that "improved production practices now being followed and with average weather our crop yields are likely to average about 20 percent above the pre-drought years, 1923–32."[15] This is only a fair sample of what may be expected. Even by 1950, production may be further increased by 13 to 17 percent (over 1944) through the wider use of fertilizer and lime, new crop varieties, pest control, crop rotation and other conservation practices.[16] This, of course, is roughly equivalent to another 13 to 17 percent increase in the land supply during the next five years.

IV

As the rate of technological advance begins exceeding the growth of total population, all farmers become increasingly dependent upon a full employment economy as a means of providing largest possible markets for farm products on the one hand and sufficient alternative employment opportunities for an increasing number of excess workers on the other hand.[17] Again this reversal of the comparative rates of farm technological change and total population growth calls for a reappraisal of the tendency to bring new land

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[14] Shepherd, John B.: "Prospective Crop Yields in 1945," *The Agricultural Situation*, February, 1945, Vol. 29, No. 2, Washington, D. C., p. 17. Also see Taeusch, Carl F.: "Are We Facing Seven Lean Years?" *The Scientific Monthly*, August, 1944, Vol. LIX, pp. 133–139; Barger and Landsberg: *ibid.*, pp. 278–286.

[15] Johnson, *ibid.*, p. 2.

[16] *Ibid.*, pp. 11–12.

[17] As used in this paper "full employment" denotes a total economy in which the number of acceptable jobs is at least equal to the number of persons seeking work.

into farms through public programs. For instance, should not programs to this end be coordinated with programs for retiring marginal lands, especially in areas of predominantly inadequate units? Also, should not effective actions be designed on the one hand to enable more families on inadequate units to shift into nonfarm occupations and on the other hand to facilitate the reorganization of land in these units into more adequate farms or retiring such a part of it as is unfit for farming?

It is not, however, the present purpose to treat in detail these and many other implications of the reversal of these comparative rates but rather to focus attention upon the fact that a system of well-operated family farms is now more dependent than ever upon a full employment economy.

The principal reason for this lies in a chain of circumstances. Technological advance at a faster rate than total population growth requires an enlargement of land and working capital per man on the one hand and a declining number of farm workers on the other hand. In a partial employment economy it is more difficult for family farms to effect this population shrinkage than for large-scale farms because with family units the primary function of farming, in the final showdown, is not to provide customary returns to investment but to make a living for operating families. Accordingly, in facing the prospect of getting out of farming into something else the practical question a family farmer faces is not whether he is or is not making a profit on the value of his land and working capital but whether he can make a better living at something else. Therefore, unless a full employment economy provides other occupations in which he can make a better livelihood for himself and his family, it is only good sense to remain on his inadequate unit even if he does waste much of his energies through ineffective use. Half a job is better than none, especially if one is his own boss.

But under a system of large-scale farms the primary function of farming is not to make a living for the farm population but to provide the highest possible returns to the pecuniary values of land and working capital. Moreover, the tie of the working population to the farm plant is a tenuous wage or semi-wage relation. Thus, any reduction in the underlying population no longer rests with decisions of independent farm workers but with the judgment of a relatively few managers. Accordingly, it is a fairly simple matter

to increase acreage and capital per man in line with the requirements of technological advance by discharging any excess farm population and throwing its upkeep cost upon society at large. No corresponding method is available by which family operators can shift the maintenance cost of their idle or ineffectively used labor and management from their inadequate units to taxpayers at large.

So long as population increase was faster than gain in farm labor productivity, a partial employment economy did not put a system of family farms at such a disadvantage. Though periodic unemployment did reduce per capita food consumption somewhat and also tended to squeeze more people onto the land than were needed at the moment, the fact remained that the rapidly expanding population not only required more productive farmers but also a growing number of farmers. Land being easily available, it was not overly difficult for family farmers as a whole to keep in line with technological advance by expanding their units. Just this happened. While the average farm was 11 percent larger in 1920 than in 1880, there was a 61 percent expansion in the number of farms and a 78 percent increase in land brought into farms. Under these circumstances the ability to hire and fire at will a large portion of the labor force did not constitute such a competitive advantage to farm managers. The large-scale farmer, like the family farmer, might keep his labor and expand his acreage. All established farmers, large and small, might look to technology as a direct aid to each in his effort to become a bigger and better farmer since it was unnecessary for anyone to crowd his neighbor to the wall in order to keep in line with technological advance.

V

Much of the so-called conflict between technological advance and family farms does not reside in the operating relation of a family to a well-operated farm. Instead, this conflict appears only in a partial employment economy and consists of a struggle between the farm and non-farm segments of that economy as to which shall maintain the farm families no longer needed in agriculture. From the farm segment springs a technological pressure for the reorganization of land into fewer and larger family units. From the non-farm segment springs a counter pressure to expand the number of units by squeezing more families onto the land.

Family farms are stunted by the cross fire. For wherever there is a clear separation of labor and management, whether in industry or large-scale farms, a restrictive economy reflects itself in an army of unemployed; but in family farming this unemployment takes the form of a growing number of inadequate units. In the one case unemployment is open and aboveboard, thus permitting easy detection, measurement, and remedial measures; while in the other case it masquerades under the guise of keeping "busy."

But as recent events bear out, a full employment economy relieves pressure for a larger number of farms and farmers and thereby makes possible greater resources for remaining family units. For example, there were 770,000 or 13.4 percent fewer households in April, 1944 containing a farm operator than in April, 1940.[18] Yet the farm plant turned out a 14 percent greater volume of food and fiber. Just how much shrinkage in the number of farms this occupational exodus represented will not be known until after the 1945 Census. Meanwhile, it is clear that this decline is not enough to enable the conversion of anywhere near all the 3.8 million inadequate units mentioned above into reasonably well-operated farms. Nevertheless, given a sustained full employment economy this adjustment has a fair chance of fully materializing. The full tendency of farm people to shift to non-farm pursuits is not reflected in the occupational shift of farm operators. In 1940 farm operators were 48 years old on the average. By that age one's habits are usually so stabilized and family responsibilities so great as to put the brakes on any ready impulse to shift into a new life work. This is not the case with younger age groups. Accordingly, while farm operator households declined only 13.4 percent from 1940 to 1944, there was a 30 percent decline in the number of young men from 14 to 19 years of age. While military call was in part the immediate reason for this decline of young men, a 22 percent decline of young women of this age group suggests that a sustained full employment economy would provide a system of family farms with a very favorable opportunity to adjust itself in line with technology already prevailing on approximately 1.5 million adequate family units. As previously stated, such a system of farms might consist of some 2.5 million units exclusive of some 80 thousand large-scale farms. Even this number, of course, would continue to decline until rates of technological advance, as reflected in

[18] Series Census-BAE, No. 1, *ibid.*

farm labor productivity and population increase, stabilize at similar speeds.

Though requiring more skilled operators and more land and capital, the fact remains that at least in mechanical terms, there is little evidence that technological advance places additional obstacles to a system of well-operated family farms. In the first place the steady tendency of mechanization has been in the direction of one and two man machines. For example, the old cradle and the modern combine require about the same labor force. Between the cradle and the combine was the old-fashioned header which required a crew of seven to ten men as well as the threshing machine which required a somewhat larger crew. Farm mechanization evens out labor peaks so that the same labor force is more able to do the work at any season. Labor peaks are primarily evidence of an incomplete mechanization of one or more operations involved in a given crop. The combine, for example, practically eliminated the extra labor required in the harvest and threshing season. The corn picker likewise eliminated the labor peak at husking time and the same principle applies to the pick-up baler.

Again, technological advance does not displace the family as the primary work unit by multiplying the number of different operations which must be carried out at the same time. Just the reverse is true. Farm processing industries have been transported from the farm to the factory, leaving on the farm primarily the growing operations. Growing things impose a temporal division of labor so that farm people shift from one operation to another as seasons change; whereas mechanization in basic non-farm industries leads to distributing the great multitude of operations involved in a finished product among many workmen and doing them simultaneously and continuously. Further, scientific farming does not, as a rule, increase the required labor force by multiplying the number of different crop and livestock enterprises which must be kept going at the same time. Instead, the tendency is to concentrate on a smaller number of supplementary enterprises which are most suitable to the soil, climate and other conditions of a given farming area.

In general, there is nothing technologically unique about a large-scale farm. Usually what one finds there are multiple units of family equipment and the same combination of enterprises that exist on well-operated family farms. The like cannot be said of modern

factory textile equipment, for example. Factory equipment cannot be broken down into household units.

A progressive farm technology as such provides a solid mechanical basis for a system of well-operated family farms. But as total population increase becomes slower than farm technological advance, the future of well-operated family units has come to rest increasingly upon a new social requirement—a full employment economy with alternative outlets for an occupationally declining agriculture. Falling short of this, family farms might survive but they would be caught between a farm technological pressure for a declining number of units, as a basis for more adequate farms, and the counter pressure of a partial employment economy for a larger number of less adequate units. Under these conditions the land would be compelled to play a larger relief role and less of its industrial role in providing men with effective employment opportunities commensurate with their abilities and the standard of living that goes with more productive effort.

RESEARCH DETERMINATION OF ECONOMIES OF SCALE[1]

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PERHAPS as never before, the public imagination today is captured by the idea of planning—planning for postwar industrial developments, for the settlement of new lands, for the rehabilitation of devastated areas, for the rebuilding of cities and the clearing of slums, for public and private works of all types.

It seems appropriate to inject into this situation some discussion of that most useful planning tool—the concept of economies of scale. The concept itself is too familiar to require extensive presentation. Briefly, the economy of scale curve tells us the levels of costs that may be expected from the operations of plants of various sizes, *when operations are organized as efficiently as possible under the given conditions.*[2] More technically, the economy of scale curve represents the locus of the lowest average costs that may be achieved with variations in the scale of operation. As the scale is increased, economies will usually be present and will lead to reduced costs, but these will eventually be replaced by dis-economies and increasing unit costs.

The relationship between cost curves for individual plants and the curve representing economies of scale is shown in Figure 1.[3] Average short-run curves for several plants have been shown in the conventional form, first decreasing with the spreading of fixed or overhead costs but finally increasing as a result of diminishing returns as more of the variable factors are combined with the fixed factors. These may be thought of as the curves characteristic of the

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[1] Based on Agricultural Economics Project No. 7, Storrs Agricultural Experiment Station.

[2] Several definitions are in order: "Plant" is used in a very general sense to describe a farm, industrial plant, school, market, or other productive unit; "scale" refers to the magnitude of the fixed plant and equipment; "capacity" represents the potential volume where a plant of a given scale operates most economically, i.e. where long and short run average cost curves are tangent; "volume" refers to the actual output achieved by a plant; "excess" or "unutilized" capacity is the amount by which volume fails to achieve capacity operation. It should be noted that the definition of capacity as the "most economical volume" will often preclude any objective measurement of capacity in advance. In spite of obvious disadvantages, this seems preferable to definitions in physical terms or, following Viner, in terms of "least cost," for these will usually depart from the most economical position. This will be clear in some of the examples given.

[3] For a more detailed theoretical discussion, see Viner, J., "Cost Curves and Supply Curves," *Zeitschrift für Nationalökonomie*, III (1931).

evolution of a plant as scale is increased over a period of time, or as the cost curves for a number of plants of different scales at any one time. If continuous variation in scale is possible, the economy curve will be tangent to these short-run curves and to many others that might have been added to the diagram.[4] If changes in scale are in fact discontinuous, then the economy curve will consist of segments,

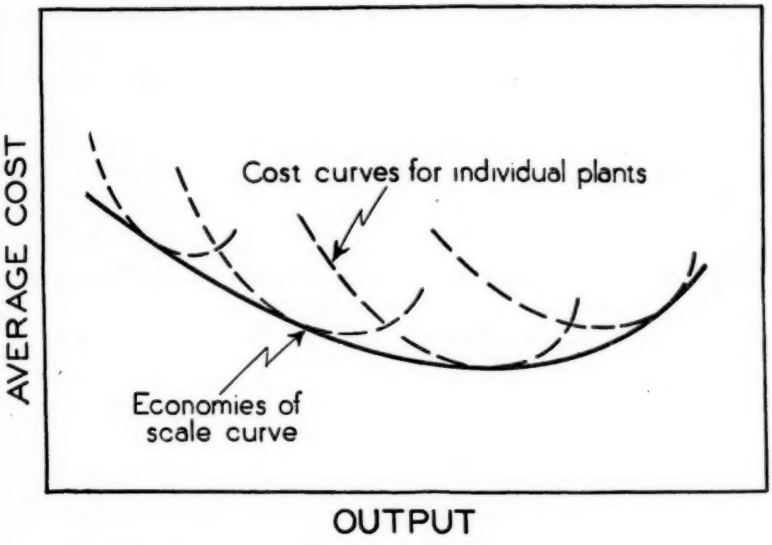

FIG. 1. RELATIONSHIP BETWEEN SHORT-RUN AVERAGE COST CURVES FOR INDIVIDUAL PLANTS OF DIFFERENT SCALES AND THE LONG-RUN AVERAGE COST CURVE FOR THE FIRM—THE ECONOMIES OF SCALE CURVE

of the several plant cost curves and will have a scalloped appearance. Assuming continuous variation, then capacity output as here defined is represented by these points of tangency. This illustrates the defect of a definition in terms of the least cost points for the short-run curves, for these points coincide with the most economical output only where the economy curve is perfectly horizontal.

This is the curve that is needed for intelligent planning, for it shows the cost advantages or disadvantages for prospective plants of various sizes. Several methods have been used by research workers in attempting to approximate such curves. Some of these

[4] There would be many poorly designed and organized plants, of course, whose short-run average cost curves would never drop as low as the economy curve.

are presented below, with some discussion of the validity of the results obtained.

Average Cost and Volume Data

Average regression lines. One of the most common types of plant cost studies involves the determination of average costs and volumes for each of a group of sample plants. These cost-volume data are frequently presented as a scatter diagram, with an average

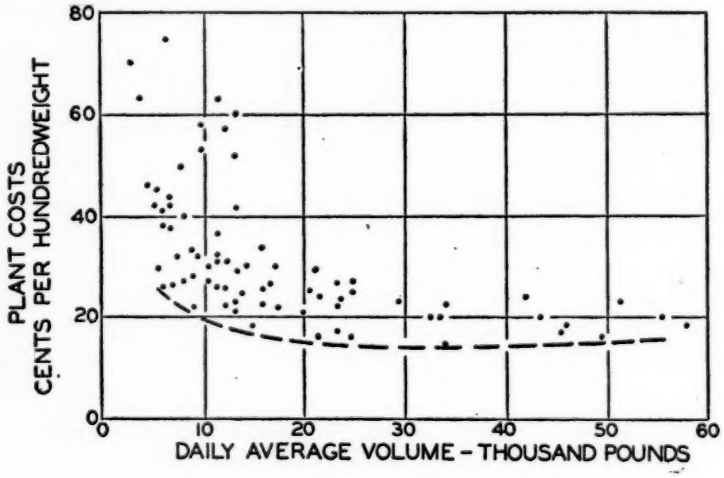

FIG. 2. AVERAGE VOLUMES AND COSTS FOR FLUID MILK PLANTS IN NEW YORK AND NEW ENGLAND, 1925

Each dot represents the cost and volume for an individual plant operating with more or less excess capacity. The envelope curve fitted to the bottom of the scatter is not the average regression, but an estimate of the economy curve.

regression line fitted to the scatter. This line or curve shows the average relationship between plant volume and costs. Unfortunately, it combines and confuses cost changes that result from the more complete utilization of a plant of a given scale with the cost changes that accompany changes in scale.[5] Each cost and volume point refers to a plant of some particular scale *and also* with some particular proportion of excess capacity. As a result, these points may scatter along the plant cost curves such as are shown in Figure

[5] Erdman, H. E., "Interpretation of Variations in Cost Data for a Group of Individual Firms," THIS JOURNAL, Vol. XXVI (May, 1944).

1 and only by chance will they approach the level of the economy of scale curve.

Such a scatter of cost and volume points is given in Figure 2. The data are from two studies of the costs of operating fluid milk shipping country plants in 1925.[6] It should be clear that any average regression fitted to these data will indicate costs above the minimum levels that define economies of scale. Moreover, the slope of the curve will tend to understate the savings available to individual plants as volume is expanded and capacity more fully utilized and to overstate the savings that will result from increases in scale when plants are operated to capacity.

Locus of lowest cost points. While the author is not familiar with any study where such an approach has been used, it would be possible to approximate the economy of scale curve from a scatter of cost and volume points by fitting an "envelope" curve to the bottom (rather than the average) of the scatter. Such a curve is included in Figure 2. In essence, it represents an attempt to define the locus of the lowest costs that were obtained at various volumes, and as such will approach the economy of scale curve insofar as the actual sample of plants included some which were efficiently organized and operated to capacity. The greatest danger in this approach appears to be that enough of such plants will not be included, especially in the high volume ranges where there are only a few observations. However, such a curve would be more defensible as an approach to economies of scale than the average regression, for at least it may approach the true curve while the average regression will only insofar as every plant in the sample is efficiently organized and operated at capacity.

A special method that would represent a combination of the above two would be to draw the curve as an average regression fitted to a sample selected to include only plants that are well designed, efficiently managed, and operated to capacity. The process of selection would eliminate excess capacity, and the resulting regression should be a close approximation to the desired curve. This direct and relatively simple approach, however, is not without practical difficulties. In the first place, it may be impossible to ob-

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[6] Schoenfeld, W. A., Some Economic Aspects of the Marketing of Milk and Cream in New England, U. S. Department of Agriculture Circular No. 16 (1927). Tucker, C. K., The Cost of Handling Fluid Milk and Cream in Country Plants, Cornell University Agricultural Experiment Station Bulletin 473 (1929).

tain data from an adequate sample of plants with operations so perfectly adjusted. A survey of fluid milk plants in northern New England in 1939 indicated that only one in 17 was operating with peak seasonal volume in excess of 90 percent of capacity, while 12 of the 17 were operating at less than 70 percent of capacity.[7] On the average, these plants had capacity more than 50 percent in excess of peak season volumes.

In the second place, capacity may be hard to define. When plants are highly mechanized, and especially when automatic or semi-automatic machines are involved, the maximum output per unit of time is fairly well defined. In these cases, physical capacity will frequently equal or approximate the most economical output. If such a plant has been in operation for some time, however, the replacement of certain items of equipment may have destroyed the original integration of the plant. The capacities of many milk plants are limited by an out-moded can washer or an undersized refrigerating system. Where such bottlenecks determine capacity, it is plain that the higher capacity of the rest of the plant will be reflected in higher investments and average costs than would be found in a plant that was well designed throughout.

Net regression lines. Since average regression lines confuse the effects of excess capacity and of changes in scale, it appears only reasonable to use both of these as factors in a multiple regression analysis and so to determine the net effect of changes in scale. Strictly as a statistical problem, this approach involves several difficulties. The first of these is the definition of capacity and excess capacity. As mentioned above, the actual capacity of any existing plant may simply represent a bottleneck in some item of equipment rather than the real capacity of the rest of the plant. Even without this difficulty of definition, there is a joint relationship between costs and the two factors excess capacity and scale. In spite of these troubles, it probably would be possible to make an approximate solution that would approach the true economy of scale curve.

A similar attack would involve adjusting the average cost-volume points to represent full capacity utilization by some method other than multiple regression. If it is possible to define capacity and to divide average costs into fixed and variable portions, then

[7] Bressler, R. G., Jr., Economies of Scale in the Operation of Country Milk Plants, New England Research Council in cooperation with the New England Agricultural Experiment Stations and the U. S. Department of Agriculture (1942).

it would be relatively simple to indicate the decreases in average fixed costs that would result from expanding volume up to capacity. If average variable costs are assumed to remain constant, then any set of average cost-volume data could be transformed into estimates of costs at capacity, as illustrated in Figure 3, and economies of scale based on the adjusted data.

The obvious objection to such an approach is that it violates the principle of increasing marginal costs. The only defense must be that this principle is not as important in the normal operating range

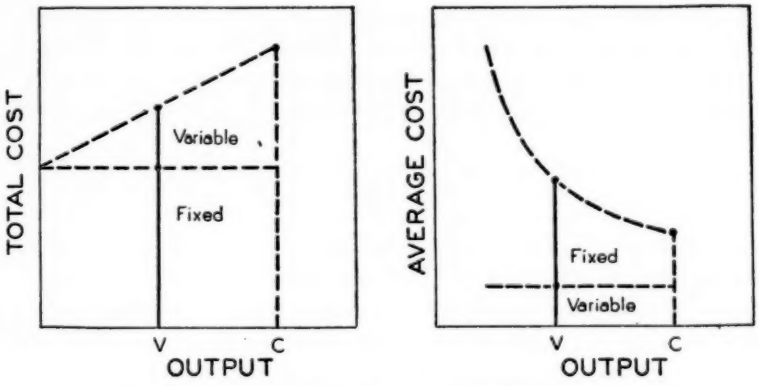

FIG. 3. PROJECTIONS OF A COST AND VOLUME SITUATION TO AN ESTIMATE OF COSTS AT FULL CAPACITY

In these diagrams, *V* represents the actual volume and *C* the plant capacity. It may be noted that the total cost projection is easier to make. Moreover, the use of total costs in this and other cases will avoid the danger of spurious correlation involved in the definition of average costs as total cost divided by volume.

as text-book illustrations might suggest, at least in some cases.[8] The previously mentioned study of country milk plants found little tendency for average variable costs to increase up to plant capacity, but very rapid increases beyond that point.[9] Paulson, studying cotton gins, concluded that total costs for any gin tended to increase with volume along a straight line.[10] This probably resulted from the fact that volume increases were made primarily by expanding the length of the ginning season. But in many cases where plants are

[8] It is significant in this connection to find that industrial engineers typically use linear total cost and total revenue curves to describe the effects of plant volume on costs and profits.

[9] Bressler, *op. cit.*

[10] Paulson, W. E., Cost and Profit of Ginning Cotton in Texas, Texas Agricultural Experiment Station Bulletin 606 (1942).

mechanized the problem of added volume becomes one of longer operation, and only minor variations in the output per unit of time are possible. While a can washer may be set at several speeds, once the top speed is achieved the addition of extra men will have little or no effect on output and will be so obviously uneconomical as to be outside of practical experience. Even in the response of milk production to feed inputs, most economists were prone to overestimate the curvilinearity of the relationship.[11] The assumption of linearity is admittedly dangerous, however, especially if unsupported by any evidence that marginal costs are in fact fairly uniform in the ranges under consideration. If marginal costs increase, then the projections made by this method will be low. In many cases, however, these errors would probably be small relative to the errors involved in using average cost-volume relationships.

Detailed Cost Curves for Sample Plants

Several of the above suggestions represent attempts to approximate segments of plant cost curves from a single cost-volume point and extensions based on multiple regression results or an (heroic) assumption as to the nature of variable costs. The methods described below are designed to derive plant cost curves directly and then to construct economy of scale curves from the plant curves. Three stages in this process are discussed, corresponding to an increasing dependence on synthesis.

Effects of volume changes on average costs. In most industries it will be possible to select a small sample of operating plants that represents a wide range in capacity or scale. In addition, it will usually be possible to select plants that have experienced large fluctuations in volume in some recent period. If input and output data for such plants can be obtained for a number of relatively short time intervals, it will be possible to construct cost curves for each plant covering the actual ranges in operations. Such a curve is illustrated in Figure 4, where monthly average cost and volume data are plotted to show the changes for a milk receiving station during a period of 20 months. Except for a tendency to decrease in the lowest volume ranges, average variable costs appear to be fairly uniform. The decline in average total costs thus reflects the spreading of

[11] Jensen, Einer, "Some Results of the U. S. Department of Agriculture Experiments in Dairy Feeding," *Proceedings of the Annual Meeting of the New England Research Council* (1939).

fixed costs without offsetting increases in variable costs. The scatter of points around the total and variable cost curves is the result of two main factors: (1) the use of short time periods and the practice of reporting purchases rather than actual use of such items as fuel caused an apparent discreteness in the calculated costs that would have averaged out over longer periods; and (2) costs for such items as fuel and electric power were influenced by seasonal temperature changes as well as by volume changes, and so varied somewhat

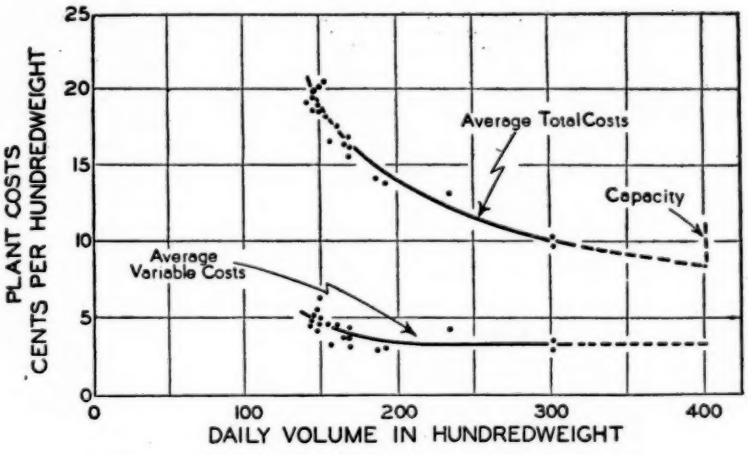

FIG. 4. AVERAGE TOTAL AND AVERAGE VARIABLE COSTS FOR A COUNTRY MILK PLANT, 1937–39

Dots represent average cost and volume data by months. The extensions of the curves to capacity volume have been based on detailed analyses of the several variable cost elements and the changes in these costs that accompanied volume changes. This diagram does not include butterfat losses as a cost, or the costs of general supervision and bookeeping that were carried by an over-all organization for a number of plants.

from season to season even when volume remained constant. The curves have been drawn so as to smooth out these fluctuations. For reasons already noted, it is preferable to use total cost relationships, but the more familiar average cost curves have been presented in the diagram.

The broken extensions of the curves at the right of the diagram represent projections to the full capacity of the plant. While such extensions could be made directly from the average curves, a safer procedure is to analyze each of the principal categories of variable costs, and to examine them for increases in unit costs as volume in-

creases. In this example there appeared to be no significant departures from constant variable costs per unit except for the slight tendency to decrease in the lower volume ranges. Nor were increasing average variable costs found in analyses of the records of other plants. The cost curves were projected, therefore, with constant average variable costs and average total costs decreasing in line with the average reduction in overhead costs.

Even though these analyses failed to reveal increasing variable costs, there is no assurance that such increases would not occur in the range from the highest actual volume to the capacity volume. Volumes in several other plants approached capacity very closely, however, without noticeable increases in average variable costs. In any event, it will be desirable to select plants where actual volumes have approached capacity in the past. This will reduce the projections necessary to complete the cost curves and will thereby reduce the possibility of error in the projections. After a number of curves have been derived in this manner, it should be possible to draw an economy of scale curve similar to that illustrated in Figure 1.

Partial budgeting. The example of the above section was unusual in that it represented the operations of a fairly modern plant. As a result, there were no problems of mal-adjustments within the plant. All equipment was complete, in good condition, and so integrated that the whole plant had a fairly specific capacity, at least within the limits of normal operating hours. Investments in land, building, and equipment were easily obtainable and represented the actual purchase or construction costs. Fixed costs were as definite as the question of appropriate rates for such items as depreciation and interest ever permits.

In many plants, this would not be the case. Mention has already been made of the internal inefficiencies and bottlenecks that may develop in actual plants after some years of use. In addition, the problem of investments and fixed costs becomes complex. The actual depreciated values carried on the books of a company may be of little use to the economist. To the accountant, the main object of depreciation is to accumulate sufficient funds to replace the plant before it needs to be replaced. Under these conditions it is not uncommon to depreciate investments more rapidly than the probable useful life would justify, and then to carry the plant at zero or very low values after it has been completely depreciated. Moreover, it is good accounting (and economic) procedure to appreciate

or depreciate values in accordance with the profitability of the plant. If a plant has been operating at a profit, there will be a tendency for these profits to be capitalized into the "book values" of the plant, or into such intangibles as good will or the value of a "going" concern. If the past experience has been unprofitable, on the other hand, the "sunk" costs will be paid only what they can earn and will usually be deflated to appropriate levels. For all of these reasons, it may be difficult to arrive at investment and fixed costs appropriate for the plant.

One solution to this problem (or part of it) has been to substitute replacement costs for book values.[12] Even when this is done, there remains the problem of inefficiencies in the internal arrangement and integration of the plant. This may be solved by a hypothetical reorganization of the plant layout and equipment so that all items are in proper relation. By a budgetary approach, this new or redesigned plant can be coupled with the operating details of the old plant and a cost curve thereby synthesized. Finally, an economy of scale curve may be drawn in proper relation to a number of such plant curves.[13]

Complete synthesis of plant cost curves. In addition to the synthesis of fixed costs, it is possible to synthesize all costs involved in plant operation. As a matter of fact, this is the common planning procedure. Architects and engineers design a plant and estimate the costs of buildings and equipment. Job analyses indicate the number of men required in the various sections of the plant. Other variable costs are projected on the basis of known cost data and the principles of physics and engineering.

A brief example should illustrate the method for variable costs. Suppose the plant operations involve a refrigerating process. The total amount of heat to be extracted (BTU's) may be calculated from original and final temperatures, weight of the product, the specific heat of the product (BTU's per pound added or extracted to raise or lower temperature one degree Fahrenheit), the weight and specific heat of any containers, and heat losses in refrigerating rooms through insulation and openings. In fact, these computations will have been made in determining the type and size of refrigerating equipment to install. Studies of the performance of refrigerating compressors are available to indicate the general levels of efficiency

[12] Tucker, *op. cit.*
[13] Bressler, *op. cit.*

that may be expected from machines of various sizes and under various conditions. This information makes it possible to estimate the total load, the hours of operation, and the kilowatt-hours of electrical power. All that remains is to apply appropriate cost rates to the power inputs, and the result will be an estimate of the variable power costs. Other processes such as lighting and heating may be synthesized in a similar manner.

Two main problems in the synthesis of plant cost curves should be mentioned. First, increasing variable costs may be overlooked, although some of the engineering data will provide a clue in this matter. Second, it is frequently held that some costs are forgotten in this process and that the actual costs that will eventually characterize the plant when and if built will be higher than the estimates. While some of this criticism probably stems from the fact that volumes (rather than costs) have been forecast on optimistic grounds, there is the possibility that some costs will be overlooked or underestimated unless the work is carefully done and unless persons familiar with the operations are available to criticize the the various aspects of the work.[14] Perhaps the best support for the method is that it has been used successfully for many years in such fields as construction. More recently, essentially the same approach has been used in agriculture, especially in planning the selection of enterprises and the adjustment of output on farms.

Seasonal Variation

Seasonal variation in output is so common in agriculture and in the processing and marketing facilities serving agriculture that some special mention of its effects on the problem of determining economies of scale seems desirable. Where seasonal variation is a factor, it is obviously impossible for volume and capacity to be adjusted perfectly. If average cost curves are of the conventional shape, then the best adjustment to seasonal variation will involve producing beyond the most economical point during the flush season and below that point in the slack season. This will result in some increase in average costs, even though the average volume

[14] It is the author's contention that men with technical training and practical experience can be of the greatest assistance in building up correct and complete sets of elements for the syntheses. On the other hand, their intimate knowledge (and often an undue emphasis on volume as a result of past experience with excess capacity) makes it difficult for them to give objective answers to the question of the most economical size of plant.

might correspond to the most economical volume. If the cost curve tends to decrease until a fairly specific capacity is reached, and then to increase very sharply (the case discussed in previous pages), capacity operation during the flush season will necessitate average costs higher and average volumes lower than the capacity levels. In either case, the cost curves may be reworked to show the season average costs that will result from any given seasonal pattern, and these revised curves may be used to determine economies of scale.

External Factors

The foregoing discussion has been limited to the changes in plant costs that are associated with changes in the scale of operation—the "net internal economies of large-scale production." In addition, there may be important economies or dis-economies associated with external factors. For the purposes of this discussion, it is helpful to distinguish three main types of external influences: (1) those resulting from the size and concentration of the industry rather than the scale of the particular plant; (2) those operations which may be handled by individual plants but which are advantageously carried on by centralized and specialized organizations; and (3) the interrelationships between plant operations and transportation.

The first classification includes the conventional "external economies" resulting from increased output. As an industry grows and concentrates in particular localities, advantages may develop in the form of specialized labor and raw materials markets and in the growth of a group of secondary service industries. From the standpoint of the problem considered in this paper, these external economies are reflected in the existing prices of resources and services, and are independent of scale in that they are equally available to large and small plants.

The second type of external influences is an extension of the first in that it involves the advantages of specialization and centralization of certain functions. It differs primarily in that these functions are under the same or closely allied ownership rather than an independent industry. While many functions may fall in this category, the more common ones include bookkeeping, management, and buying and selling. If these operations are conducted by the individual plant, they must be considered with the internal factors and will result in technical or pecuniary economies. In many cases, however, the economical scale for these operations will differ from

that for the direct plant operations. Under such conditions, the optimum organization will involve the concentration of these functions for a number of plants in a single, specialized agency. Such developments are familiar in the centralized management and bookkeeping carried on by large firms for a number of subsidiary plants. In the individual plants these functions are reduced to a minimum of more or less routine work. In a similar way the advantages of large scale buying, selling, and advertising may be made available to plants regardless of their scale through associations and cooperatives. As in the first classification, external economies will be reflected to the individual plant in the form of prices or costs of materials and services. A complete analysis, however, would involve economy-of-scale studies for the specialized functions along lines similar to the studies of the subsidiary plants.

While transportation is clearly external to the operation of a particular plant, both plant operations and transportation are integral parts of the complete function. As the scale of plant operations increases, there will be accompanying changes in the nature and magnitude of the required transportation of raw materials and finished products. Larger operations will ordinarily make different forms of transport service available and economical. In its simplest form, this is illustrated by the difference between carlot and less-than-carlot freight rates. Moreover, whenever the operation involves the collection of raw materials or the distribution of products over a wide geographic area, increases in plant size will be associated with expanded supply or market areas and so with increased transport costs. Potential economies in plant operation are thus counter-balanced by dis-economies in transportation. The optimum organization of the complete function must be determined by balancing off these divergent tendencies so as to achieve the lowest cost for the combined operations.[15]

Conclusions

Economy of scale or long-run average cost curves are important aids to intelligent planning, and the opportunities for their use will be magnified in the postwar period. The derivation of such relationships provides the research worker with a useful and interesting challenge. Perhaps the simplest and most direct approach to this

[15] For a more detailed discussion, see: Bressler, R. G., Jr., "Transportation and Country Assembly of Milk," THIS JOURNAL, Vol. XXII, No. 1 (February, 1940).

problem involves the selection of a sample of plants that are well designed and efficiently operated without excess capacity (other than that made unavoidable by seasonal factors). Studies of average cost-volume relationships that combine and confuse economies of scale with internal inefficiencies such as excess capacity may be useful, but the results describe neither the short-run cost changes that an individual plant may achieve by expanding volume and "spreading overhead costs" nor the long-run cost changes that result from adjustments in the scale of operation.

If this simple approach cannot be used, the best alternative would appear to be the detailed analysis of cost-volume relationships for each of a small group of plants. If these plants are selected so as to be well organized and to represent a wide range in capacity, and if historical data are available over a period when output varied greatly, it will be possible to produce or at least approximate important portions of the cost curves. If necessary, these curves may be extended up to capacity volume through detailed analyses of the various items of cost and the effects of volume changes on these costs. Approximations to these same curves may be synthesized, partially or completely, by following methods essentially similar to those used by architects, contractors, and engineers in forecasting the costs of building, equipping, and operating plants.

One final word should be added. Even though technology may not change significantly for a period of years, economy curves may be limited in their application by historical and geographical differences in prices and cost rates. This limitation may be largely overcome by casting all relationships first in physical terms and then converting them to costs by the application of suitable cost rates. Rates may be varied according to the locality or the time, and the economy curves so adjusted to particular conditions. Such modifications are relatively simple to make and will greatly enhance the value of the research results. Of course, if the relative prices of factors have changed materially or if there have been important technological developments, then the optimum combination of the factors will be different and the basic physical relationships will have to be revised.

COSTS OF FEDERAL AGRICULTURAL ACTIVITIES: THEIR MEANING AND CLASSIFICATION FOR PURPOSES OF ECONOMIC ANALYSIS*

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DURING the period of underemployment of the 1930's there was a tendency to judge the various types of governmental activities almost entirely in terms of direct benefits to the particular individuals or economic groups immediately concerned and to exclude such standards as the cost of governmental activities and their general benefits relative to those of other governmental services. In recent years, however, as a consequence of all-out war, there has been greater pressure to utilize more efficiently resources of both men and materials, and attention has again centered on some of the basic economic relationships which are fundamental to the adequate operation of the economy. In the sphere of governmental activity one form that this emphasis has taken has been the demand to reduce so-called nonessential activities of the Federal Government.

In some respects it is unfortunate that the emphasis on economy and efficiency should be so pronounced in times of war, for judgment as to what is most important is highly colored by the immediate needs of the moment. As a result it is difficult to give proper weight to some of the longer run considerations such as adequate peacetime employment and a desirable functional division between government and private services. On the other hand, the vast physical and financial expenditures in this war, the size of the public debt, the unavoidable reconstruction and rehabilitation expenditures, and the outlook for a high level of defense expenditures in the postwar period, all highlight the need for careful consideration of the kinds of governmental services to be undertaken and the formulation of concepts useful in making such judgments. It is to be hoped that attention to the problem of economic efficiency can be sustained even after we are "out of the woods," and that in the postwar period ideas of economic efficiency can be broadened until

* The ideas presented here have served as a framework of reference for a fiscal study of Federal activities related to agriculture on which the author is engaged in the Bureau of Agricultural Economics. Appreciation is due Dr. Donald C. Horton, Bureau of Agricultural Economics, for the stimulation and interchange of ideas he has provided in connection with this project.

they reflect an adequate comprehension of all of the closely related economic problems which constitute efficient over-all operation of the economy.

This paper seeks to explore only certain aspects of these problems; namely, the meaning and significance of "costs" of governmental activities with particular reference to agricultural activities of the Federal Government, the problems involved in the technical measurement of these costs, and the classification of Federal activities related to agriculture into appropriate functional categories useful for economic analysis.

Meaning and Significance of Costs

Costs of Federal activities related to agriculture have the same basic significance as have those in other fields of governmental action. As the term is used here, cost means the financial burden borne directly or indirectly by general taxpayers as a result of the various services and programs of the Federal Government. Implicit in this definition is much the same idea that is present in the accounting term of costs or expenses for a business firm, except that the entity bearing the burden of governmental costs consists of general taxpayers as a group whereas business costs are an operating condition for the business firm. Despite the general similarity of meaning, there is an important distinction between the concept of governmental costs and the business concept of costs. As ordinarily used, business costs mean the total outlay by a business firm for materials, labor, and other resources used in the process of providing goods and services. Governmental activities also involve outlays for materials, labor, etc., and these outlays are much like business expenses; but such expenses are not necessarily costs to general taxpayers as the term is used here. To the extent that governmental enterprises charge a price to consumers as a group to cover the expenses of quasi-business services, these expenses do not involve costs to taxpayers. The concept of general taxpayers as an entity thus lies back of the concept of cost of government.

Governmental costs also are conduct conditioning in a somewhat different way than are business costs. Whenever a decision is made to extend governmental activities, to discontinue others, or to adopt new programs, there is consciously or unconsciously a weighing of the benefits and other effects of such programs against their costs to taxpayers. These judgments are made primarily by legislative

bodies and in the light of a wide variety of considerations. In sharp contrast to the legislative process of determining governmental activities, decisions to use resources in the private economy to produce food, clothing, housing, and personal services are made on the basis of the ability and willingness of consumers to pay a price sufficient to cover the costs of making specific goods available. Presumably the free play of market forces and the resulting price structure serve both as a guide to the proper allocation of labor, capital, and other factors in the production process and as a sufficient check upon the amount of scarce resources so employed. Those services of government which are more in the nature of business services, and for which a price is charged, are assumed to operate under conditions similar to the private economy. The payment of a price by recipients of the service is assumed to serve as a sufficient check upon the use of resources for such purposes. Consequently, in the consideration of governmental services, whenever a question arises as to the amount of benefit derived relative to the volume of costs, it generally refers to those services of government which are made freely available to citizens, the cost of which is borne by general taxpayers. Needless to say, many services of government are a mixture of business and free services, and in these cases a combination of public decisions and market-price decisions control the use of resources.

Governmental Costs as Competitive With Private Economy. The most general interpretation of costs of government is to regard them as being competitive with the costs of conducting private economic activity. This idea stems from the fact that economic resources are scarce relative to human wants and the performance of governmental services requires the utilization of scarce resources in the same sense that private economic activity utilizes scarce resources. In the private economy the costs of materials, labor, and other resources, in conjunction with consumers' demand, determine the market price of the product—a price which indicates the economic significance of the commodity and serves to control its allocation among various possible uses. Similarly, because government hires the services of individuals and wealth by bidding in the market in competition with the demand of private business for these same services, it is assumed that the dollar cost of the resources used by government measures their economic importance. Accordingly, costs of government in relation to total national income are fre-

quently regarded as measuring the share of productive resources devoted to governmental services.

Limitations on Concept of Competitive Costs. While the concept which regards costs of government as competitive with the cost of private economic activity is applicable to many activities of the Federal Government, there are certain limitations on its too rigorous use. As has been indicated above, most governmental services are not sold on the market as private services are sold, but are made freely available to those who qualify and who wish to make use of them. The extent and kind of services provided and the levying of taxes to meet their cost are determined through legislative processes rather than market forces. There is, of course, in an over-all sense a balancing of the value of governmental services against their costs, but the main considerations are frequently social rather than individual. At times the welfare of some individuals may be slighted in the interest of greater benefits for the majority of individuals or for the public as a whole. We rely upon the democratic process to secure an equitable adjustment between the individual and the public interest involved. Consequently, in the field of governmental action there can never be a precise balance between worth of particular services and their costs, and it is inevitable that these matters be left to legislative judgment.

A second limitation lies in the fact that the private economy does not always operate at as high a level of economic activity as the available resources would reasonably permit. Under these circumstances costs of government do not compete so sharply with the private use of resources as in times of full employment. For example, in the 1930's, the fact that many millions of persons were unable to find employment acted as a strong inducement for government to undertake work projects in place of direct relief grants. Such projects not only provided income for the unemployed but also enabled society to make some use of economic resources whose inactivity represented a permanent loss to the economy. Granted that government work projects in times of unemployment utilize some resources which compete with private industry, still the use of idle resources does not involve as great an economic cost as does the use of those same resources in times of full employment.

Still a third limitation is due to the nature of certain governmental activities such as relief grants and benefit payments, which are intended primarily as a means of transferring purchasing

power. These activities occasion money costs to general taxpayers, but others are the recipients of the funds. A competitive use of "real" physical resources is not involved except in the costs of administration. What is perhaps of more importance than the limited governmental use of resources in administration is the indirect effect on private consumer and investment expenditures induced by the redistribution of income which occurs through government payments to individuals. Even though little use of physical economic resources may be involved, costs of government should include all outlays which directly or indirectly place a charge on general taxpayers.

Costs Not a Measure of Aids to Agriculture. Frequently, an attempt is made to use data on Federal agricultural expenditures as reported by the Treasury or data on costs of Federal agricultural programs as a measure of so-called aids to agriculture. Obviously, neither expenditures nor costs to general taxpayers afford a precise measure of the aid which the Federal Government renders to the agricultural industry. Without attempting to define the term "aid," it should be clear that other considerations besides cost are important in determining the amount of governmental assistance which agriculture receives. For example, the nature of the governmental service—which establishes the particular kind of framework in terms of which government attempts to benefit the agricultural economy—is important in determining the amount of aid received by agriculture and by other groups. Furthermore, there are numerous economic and social factors which also affect the distribution and ultimate benefit from governmental aids. Costs of government are one important element in judging the desirability of governmental activities, but they do not measure "aids" except in a very crude sense as applied to broad aggregates of governmental functions.

Problems of Measuring the Cost of Federal Agricultural Activities

Measuring the costs of long-standing agricultural research and educational activities creates no difficult technical problems, for the expenses of these services are adequately recorded and clearly recognized as costs to the Treasury. Either Budget data or Treasury disbursement figures are a reasonably good measure of the costs of these activities. Similarly, the volume of cash payments to

individual farmers in connection with production-control programs can immediately be interpreted as costs to the Treasury and to general taxpayers. What cannot readily be determined are the costs involved in various Federal loan, investment, and other "enterprise" activities related to agriculture.

Treasury figures on cash expenditures, which are the basic source of financial data on governmental activities, are actually figures on disbursements from the Treasury, and, accordingly, they include various investment expenditures such as direct loans, subscriptions to capital stock of governmental corporations, and capital outlays, as well as actual expenses of carrying on governmental services. Cost is a narrower concept than disbursement and should be a measure of the financial obligation of taxpayers as a group arising out of the performance of governmental activities. Therefore, costs should include: (1) The cost of routine governmental services such as research, education, regulatory activities, and general administration; (2) losses incident to governmental loan operations; (3) losses incident to other governmental enterprises such as reclamation projects and crop insurance; (4) interest on government-provided capital for governmental enterprises; (5) direct grants to individuals; and (6) grants-in-aid to State and local units of government. Certain aspects of the problem of measuring these costs are discussed in the following sections.

Current Costs and Capital Outlays. In arriving at data on the cost of governmental activities in any field, four principal types of disbursements must be distinguished; namely, current costs, capital outlays, loans, and trust fund operations. Current costs consist of the expenses incurred for services of government for which no specific price is charged. In connection with some of the services rendered through the Department of Agriculture, there are collections of fees, licenses, and other reimbursements. While not always precisely in accord with the cost of these services, it seems preferable to regard these collections as charges for the services rendered unless there is an indication that the fee charged is out of all proportion to the service rendered, as is true, for example, in the case of liquor licenses of the State governments when the license charge is really a revenue device.

Logically capital outlays should be distinguished from current costs; however, this is difficult to accomplish in government expenditure data because of (1) the inadequacy of governmental

accounting in distinguishing capital outlays from other expenditures, and (2) the variety of types of capital assets acquired by the Federal Government and the difficulty of determining suitable depreciation rates. As a result, most ordinary expenditures for capital assets, whether land, buildings, machinery, or other equipment, may be included as current costs in the years in which the assets are acquired. This involves no very great inaccuracy for an organization as large as the Federal Government if the capital assets acquired represent a relatively small proportion of total costs and are incidental to regular governmental services. Treating capital outlays as current costs, however, would be inaccurate when a program is primarily the acquisition of capital assets and repayments are expected to return the monetary investment made. Outlays for reclamation projects are an example. An inaccuracy also results in the case of land purchases when the asset may not depreciate or wear out in ensuing years and the land may subsequently be sold thus recovering the funds invested.

Loans should also be distinguished from current costs because loans by their very nature are expected to be recovered in principal repayments. Trust fund operations involve no cost to government inasmuch as these items are in reality bookkeeping transfers of one kind or another.

Governmental Enterprise Services. In addition to ordinary governmental services, there is a substantial volume of governmental enterprise activity similar to the postal system. These enterprise services are expected to be paid for by the prices charged in a manner similar to private economic activity. And in still other instances such as the rural rehabilation program of the Farm Security Administration, by shouldering a part of the cost, the Federal Government utilizes enterprise relationships as a medium for furnishing governmental services or for providing special benefits to particular groups.

Ideally the method of determining the cost to the Federal Government of such enterprise activities is to compare the receipts or gross income with the full costs of operation including costs of administration, interest on capital supplied, and any other pertinent costs in an economic sense. The extent to which receipts do not cover the full costs would be a measure of the annual cost to the Federal Government. This method would apply to governmental enterprise activity the same considerations which would be

applied to the private economy. The fact remains, however, that it is difficult to determine the full costs of governmental enterprise activity.

The Cost of Uncertainty Bearing. The cost to taxpayers arising out of performance of the uncertainty-bearing function is virtually impossible to estimate. By entering into enterprise activity through agencies of government, collective judgment as to the economic worth of an enterprise is substituted for the judgment of the private entrepreneur. Although collective judgment may be more nearly in accord with social interests than the judgment of the private individual from his self-interest point of view, it is also necessary to recognize that the cost of the uncertainty-bearing function performed by the private entrepreneur is now shifted to the group as a whole acting through its responsible agents in government. This is particularly true of the economic cost associated with the undertaking of financial responsibility in the case of such agencies as the Federal Farm Mortgage Corporation, the Federal land banks, and the production credit corporations, and also where the Government guarantees the obligations of a Federal agency. In the private economy the responsibility for making entrepreneurial decisions rests in private hands, and the losses of the enterprise are sustained by those who take the financial responsibility; any profits are viewed as a payment for this uncertainty-bearing function. In governmental enterprise the financial responsibility is borne by society as a whole, and in most Federal enterprises the rates set or charges made are not intended to produce any profits, but the benefits from increased enterprise efficiency are intended to be felt elsewhere. In fact, these charges may not be expected to cover even the minimum interest on the capital supplied. Under such circumstances the cost of entrepreneurial services performed by government can hardly be measured. There is no objective standard with which to compare these costs, particularly when there is no very closely competitive private enterprise of a similar nature.

Annual Losses From Enterprise Activities. Administrative expenses and other operating costs of governmental enterprises can usually be determined fairly readily on an annual basis from data contained in the *Budget of the United States* or from reports of the corporations or agencies concerned. What cannot readily be determined is the annual volume of losses from these enterprise activi-

ties. In the case of going corporations, such as the Commodity Credit Corporation, there is no way of knowing what these losses actually will be until the affairs of the particular corporation are finally wound up and the assets liquidated. An indication can be given of what accrued losses have been up to a certain date, but it must be remembered that so long as the corporation is a going concern those losses may be offset, at least in part, from profits on future operations. Annual accounting for governmental costs is simply not applicable to an enterprise activity which necessarily relates to a longer period of time.

Notwithstanding the accounting difficulties involved, cost data should include an estimate of the loss which the Federal Government is likely to suffer as a result of the programs undertaken, and this loss should be imputed to the years in which the activity is carried on rather than the years in which the loss is legally recognized or actually written off. Unless appropriate losses are imputed to the years in which the services are performed, there can be no proper basis for comparing the financial burden involved with the benefits or social gain from governmental activity. The fact that it is necessary to estimate such losses and that estimates may have to be revised from time to time is no greater handicap than that faced by the private businessman whenever he estimates the probable profits or losses from expanded production or the purchase of new capital goods.

In the case of loan activity carried on by governmental agencies rather than by corporations, the record of losses incurred in the past from similar types of loans affords the only objective basis for estimating losses on current loans. This method of estimating losses could be applied in connection with the loan activity of the Farm Security Administration and the emergency crop and feed loans made through the Farm Credit Administration.

Classification of Activities Related to Agriculture

For the purposes of this discussion it has been assumed that there is a fairly well defined group of activities of the Federal Government which might be regarded as "agricultural" activities. Such an assumption is not entirely justified. The determination of total costs of government in connection with agricultural services is as much a problem of defining and classifying "agricultural" services as it is a problem of obtaining representative data with which to

measure the costs involved. An appraisal of governmental activities must rest on a sound basis of classification, otherwise there can be no effective way of comparing benefits and other effects of diverse governmental programs. It is not intended here to make an exhaustive classification of all Federal activities related to agriculture, but the outline and basis for such a classification can be indicated.

It has long been customary in treatises on public finance to regard governmental activities as falling into certain functional categories such as national defense, protection of persons and property, education, highways, etc. Accordingly it would seem logical, in analyzing activities of the Federal Government, to designate one category as "agricultural activities." The basis for this category lies in the fact that for many years public policy has consistently sought to give special aid to the agricultural industry or to agricultural interests. The agricultural industry and rural people have been accorded "special treatment" by means of special research and educational services, federally sponsored agricultural credit institutions, and, particularly since 1929, both special programs designed to influence farm prices and grants to individuals as a means of raising farm income directly. In most governmental programs affecting agriculture there has been a measure of general social interest, and no analysis would be complete without considering the degree of general social interest involved. But in an over-all classification of Federal activities, the category of "agriculture" would necessarily be distinguished from other functions of government according to whether such services were intended primarily to benefit a special group or were impartially for the benefit of society as a whole.

Within the "agriculture" category, doubtless many classifications are possible, but the classification finally selected must harmonize a number of competing considerations. It must be useful for economic analysis; at the same time it must recognize the institutional setting into which the activities are fitted and the limitations in obtaining financial data regarding such activities. The purpose of any classification is to bring order into that which is unwieldy without classification. Therefore, each subgroup of activities should be sufficiently homogeneous so that a generalized judgment can be made with regard to all the activities of that group.

The most workable classification of Federal activities related to agriculture seems to be one based on the economic nature of the program carried on. That is to say, all governmental services involve certain fundamental relationships between government and the private economy, and the classification would depend on the aspect of the agricultural economy or the kind of governmental relationship concerned. Such a classification is neutral in the sense that it avoids any preconceptions as to the specific purposes for which a program is undertaken or the specific benefits from such a program; and it permits an unbiased analysis of the actual effects of the Federal programs included. On the other hand, it provides a basis for a meaningful comparison between groups of agricultural activities according to their costs to the Treasury and indirectly to general taxpayers. A tentative list of these relationships between the Federal Government and the agricultural economy follows:

1. Activities related to the development and dissemination of knowledge regarding agricultural production and marketing processes.
2. Activities related to the development and conservation of land resources.
3. Activities related to the financing of farm ownership and farm operation.
4. Activities related to the bearing of agricultural production risks.
5. Activities designed to affect agricultural prices by operating through market processes.
6. Activities designed to affect agricultural production decisions and to supplement farm incomes.
7. Activities relating to special wartime food-management programs.
8. Activities in the nature of direct grants and services to relieve distress and to rehabilitate farm families.

It should be noted that agricultural programs of the Federal Government, as legally defined, do not readily fall into these categories. Programs such as those of the Farm Security Administration, the Agricultural Adjustment Agency, and certain agencies of the War Food Administration are a mixture of two or more of the kinds of activities listed. In these cases it is necessary to make a subdivision of the costs of a particular governmental

program. For example, the costs of AAA are in part the cost of developing and conserving land resources and in part the cost of activities designed to control agricultural production and to supplement farmers' incomes directly. Moreover, in the 1930's, the AAA administered export-subsidy and surplus-removal programs which affected agricultural prices by operating through market processes. In the case of surplus-removal programs and subsidized food-consumption programs, the presence of general welfare benefits as well as special aids for the farm group further complicates the problem of classifying governmental services. In such cases it is necessary to classify the program according to the manner in which it affects the agricultural economy even though general welfare purposes are also important.

Throughout this type of classification the degree and kind of governmental influence on the agricultural economy are the bases for classifying a particular program. Those research and educational services of the Federal Government which operate by increasing the general knowledge of the farmer regarding agricultural production processes and marketing conditions differ in their effects from programs which directly influence the market demand or supply of farm products. Similarly, governmentally sponsored farm credit agencies making primarily business-credit loans differ in their relationship to the agricultural economy from the loan activities of the Commodity Credit Corporation in which price-support programs are a counterpart of the Corporation's loan activities.

Any classification of Federal agricultural activities is less suitable as the period over which it is applied is extended. During the war period, all activities of the Federal Government have been related in some degree to the functioning of the war economy. Likewise during the depression years of the 1930's, most Federal programs were related to the problem of promoting a recovery of the private economy as a whole. It is impossible, therefore, to suggest a final and unchanging classification. However, a classification and analysis of the costs of Federal activities related to agriculture in terms of the major items listed above would provide a better framework than now exists for comparing and evaluating the overall significance of governmental services.

* * * *

This paper has attempted to state what the author believes is a desirable point of view with regard to costs of government and the

applicability of that point of view to agricultural activities of the Federal Government and their appropriate classification. Functions of government should be selected with a view to the manner in which they mesh with economic activities of the private economy. This does not mean that the economic effect of governmental services and other activities should be the sole guide to their selection, but it does mean that their economic effect—in the broadest terms possible—should be given major consideration in determining governmental policy. Economic effects have at least three aspects: (1) The incidence of the direct benefits which flow from public expenditures to carry on governmental activity, (2) the effect of the institutional set-up and the administrative mechanism through which government influences the private economy, and (3) the cost to the Treasury and indirectly to general taxpayers as a result of governmental services. This third aspect encompasses the effects of various alternative methods of obtaining tax revenues. For the purposes of this paper it has been assumed that in a progressive, democratic society costs of government will be distributed in an equitable manner, with due regard to the effect of taxes on business efficiency and individual economic well-being.

Benefits from governmental activities should be compared with their costs and with the alternative use of such funds within the private economy. This means, of course, that determining the absolute dollar costs of governmental services is only the first step toward determination of governmental policy. Some judgments must also be reached on over-all benefits and alternative private and public use of such funds. The normal peacetime economy would involve very different judgments from a wartime economy, and periods of depression would involve still other judgment standards.

WAR-TIME PRICE CONTROL OF FRESH CITRUS FRUITS

J. Wayne Reitz*

PRICE CONTROL of fresh citrus fruits has been in operation in some form for the past three seasons. Citrus fruits were the first of fresh fruit and vegetable perishables to be brought under the emergency price control act. Officials of the Office of Price Administration have frequently pointed with pride to the smoothness with which price regulations have operated on citrus in comparison with other commodities. In view of its "long" history and the judgment rendered by price officials, it may be an opportune time to describe and examine the record of price control on this important segment of the fresh fruit and vegetable industry. Furthermore, a preliminary type of analysis can best be made while the events are still in sharp focus.

If certain mechanisms of price control and their implications are to be properly judged, it can best be done by concentrating on one product. Application may then be made to problems of commodities with similar production and marketing characteristics. It is the author's view that the problems of price control for citrus fruits are at a minimum as compared with those of fresh vegetables and most of the other fresh fruits. Thus, at the outset, it will be recognized that weaknesses in the citrus price control program are generally magnified for most other fruit and vegetable perishables.

History of Citrus Price Regulation

The first attempt to control citrus prices was under Temporary MPR 22. It applied only at the retail level and the maximum price was limited to the highest price charged by the seller during the period September 28, 1942, to October 2, 1942. This regulation became effective on October 5, 1942, and continued in effect until December 3, 1942. On January 11, 1943, MPR 292, applicable only to fresh citrus fruits, became effective. Under this regulation, the first level of control was set at the shipping point with percentage mark-ups for the various distribution services. There were as many delivered price ceilings as there were freight differentials

* Economic Counsel, United Growers & Shippers Association, Orlando, Florida. While alone responsible for the views expressed, the writer wishes to acknowledge the suggestions and criticisms given by Drs. C. V. Noble and H. G. Hamilton of the University of Florida and Dr. K. H. Parsons of the University of Wisconsin.

among points of origin to destination. While not intended, non-shippers and non-packers circumvented country shippers, in periods of short supply, by buying fruit direct from the grower and selling it at whatever price they wished in wholesale or retail outlets, provided retail ceilings were not exceeded. This was possible because of the favorable wholesale and retail mark-ups which permitted handlers easily to absorb fruit costs above the f.o.b. level. This regulation, with numerous amendments, was in effect until February 23, 1944 when Amendment 19 creating Appendix I was added to MPR 426, the general regulation for fresh fruits and vegetables. Appendix I pertained exclusively to fresh citrus and contained important modifications of regulation 292. The new regulation established basing point pricing, thereby making it possible to obtain uniform delivered ceiling prices irrespective of point of origin within an area of production. It also forbade non-shippers and non-packers from paying more than the reflected on-tree price when buying direct from grower. A third change was the establishment of fixed dollar and cent mark-ups for the various jobbing interests instead of the percentage mark-ups under MPR 292.

Thus, with a short period of control at the retail level only, a full year under MPR 292 and over a year with MPR 426, it now becomes possible to evaluate the effectiveness and the implications of controlling citrus prices.

Method of Computing Ceiling Prices

Basic to a study of price control on any commodity is an understanding of the methods of computing ceiling prices at the various levels of control. Under Section 3 of the Stabilization Act of October 2, 1942, maximum prices on farm products may not be fixed at a level which will reflect to producers a price lower than the highest of: (1) Parity prices or comparable prices when comparable prices have been substituted for parity prices, as a result of production and consumption of a commodity having so changed as to result in a price out of line with parity prices of the basic commodities as provided for by the Act; (2) The highest price between January 1 and September 15, 1942, when adjusted for seasonal variation; or (3) A price sufficient to cover the increases in labor and other cash costs and depreciation since January 1, 1941.

In the case of oranges, a comparable price, with a 1933–40 base, was selected in conformity with the provisions of the Act. For grapefruit, the highest price between January 1 and September 15, 1942, was found to be mandatory. To these prices appropriate adjustments were made for changes and anticipated changes in the index of prices paid by farmers, plus an allowance of 50 cents per box for grade and size.[1] On oranges the U. S. base on-tree price thus arrived at was $2.67 and for grapefruit $1.70. These prices were then adjusted for area differentials on the basis of past price relationships. In the case of oranges, Florida and Texas prices were reduced from the U. S. base by 26 cents and California and Arizona received an increase of 18 cents. The area differential for grapefruit was a minus 6 cents for Florida and Texas and a plus 25 cents for California and Arizona. With the area adjustments, the base Florida price for Interior[2] oranges is $2.41 and for white grapefruit $1.64.

Using Interior Florida base prices as a starting point,[3] the method of arriving at the grower on-tree reflected price and in turn the f.o.b., delivered wholesale, and retail price is shown in Table 1. The varietal differentials cover the normal discount on oranges as compared with tangerines, Temple oranges and like varieties; whereas on grapefruit, white is discounted in comparison with pink. Since the differentials are made on a weighted basis the premium for tangerines and the like is a plus 35 cents over the Florida base, and for pink grapefruit a plus 33 cents. Seasonal differentials are self-explanatory. The area differentials are to reflect historical price relationships between the Interior and Indian River sections. Here again, because of the element of weighting, Indian River receives an average of 34 cents above the Florida base for oranges and 45 cents for white grapefruit.

Up to this point all that has been obtained is an on-tree price which will reflect to the grower a price to conform with the provisions of the Stabilization Act. This price covers two different

[1] The Stabilization Act requires that prices be fixed by grade and size or a reasonable allowance be added to the legal minimum to permit the better grades and sizes to sell at their normal relationships.

[2] Two major areas of production, the Interior and Indian River areas, are recognized in Florida. Historically Indian River fruit produced along the middle and lower east coast has commanded a higher price than Interior grown fruit.

[3] For purposes of simplicity, most of the illustrations will apply to Interior Florida fruit. Since Texas oranges and white grapefruit have the same f.o.b. prices and basing point as Florida Interior, the applications thus apply to areas of production in two states.

seasons for oranges and white grapefruit. Ceilings on tangerines and pink grapefruit are without seasonal differentials. To this on-tree price is added $1.20 for picking, hauling and packing in the case of oranges and $1.05 for grapefruit.

TABLE 1. METHOD OF COMPUTING PRICE CEILINGS ON FLORIDA INTERIOR AND TEXAS ORANGES AND WHITE GRAPEFRUIT FROM BASE PRICE TO CONSUMER IN NEW YORK CITY.* (1⅘ bushel box)

Item	Oranges		White Grapefruit	
	Sept. 1 Feb. 28	Mar. 1 Aug. 31	Sept. 1 Feb. 28	Mar. 1 Aug. 31
Base price[a]	$2.41	$2.41	$1.64	$1.64
Variety differential	−.03	−.03	−.02	−.02
Variety base price	2.38	2.38	1.62	1.62
Seasonal differential	−.11	+.19	−.11	+.15
Seasonal adjusted price	2.27	2.57	1.51	1.77
Area differential	−.02	−.02	−.05	−.05
On-tree reflected price	2.25	2.55	1.46	1.72
Allowance for pick, haul and pack	1.20	1.20	1.05	1.05
F.O.B. ceiling	3.45	3.75	2.51	2.77
Freight and protective service	.90	.90	.90	.90
Delivered price	4.35	4.65	3.41	3.67
Maximum jobbing mark-up	.75	.75	.65	.65
Maximum price to retailer	5.10	5.40	4.06	4.32
Retail mark-up (39%)	1.99	2.11	1.58	1.68
Price to consumer:				
Per box	7.09	7.51	5.64	6.00
Per pound[b]	.084	.089	.077	.082

* Also applies to Philadelphia, Baltimore and Newark, and is approximate for points along the Ohio River.

[a] Prices do not show adjustments for damage suffered in the October 19, 1944 hurricane which were handled by temporary amendments to MPR 426 during the 1944–45 season. There were no adjustments on oranges after March 1, 1945.

[b] In computing the price per pound, the following net weights were used: Oranges, 84 pounds; grapefruit, 73 pounds.

The first effective point of price control is at the f.o.b. level. While no shipper or packer of citrus fruit may sell above the announced f.o.b. price, he need not observe the on-tree reflected price if his costs and operating conditions will permit him to pay more. However, a non-shipper or a non-packer who buys fruit direct from the grower cannot exceed the on-tree reflected price.

To arrive at delivered ceiling prices, the freight rate from Homestead, Florida, plus a 10 cent protective service allowance,[4] is added to the f.o.b. ceiling. Using the same basing point of Homestead for both Florida and Texas presents an interesting aspect of price con-

[4] A 3 percent Federal Tax is also added to the freight and protective service allowance.

trol. It, no doubt, was done in the interest of simplicity. However, in practice it definitely tends to alter the market territories for each of the areas. Especially is this so in the case of Texas. The system has greatly reduced the shipment of Texas citrus to the eastern markets, because actual freight and refrigeration is greater than the allowance.[5] To the extent that Florida shipments fill the eastern market gap, movements from Florida to the Middle West are thereby reduced.

With a Florida basing point, Texas has a distinct advantage in selling as much fruit as possible near home. For example, shipments of white grapefruit from points in Texas to Kansas City enjoy a freight and protective service mark-up of $1.06, based on Homestead. The actual freight and refrigeration is approximately 63 cents and when ventilated cars are used the charge is considerably lower. Thus if fruit is selling at ceiling at all destination points, Texas shippers can garner another 43 cents or more above the f.o.b. ceiling for shipments to Kansas City. The same situation, to a much lesser degree, applies on Florida shipments since Homestead is in the southernmost part of the state. In general, when citrus is selling at ceiling, shippers can net back from 10 to 25 cents above the f.o.b. price by selling on a delivered basis. The amount varies with the distance the shippers are from Homestead and whether or not refrigeration is used.

For deliveries within Florida, a total of 25 cents is allowed for transportation and protective service charges. Since the actual costs of delivery so nearly approach or exceed this figure in many parts of the state, shippers find it more profitable, when prices are at ceiling, to ship citrus to more distant out-of-state points using the Homestead basing point. As a consequence, in May of 1945 housewives in Florida are finding it difficult to buy fruit produced in this state. It seems a bit of irony that Floridians may have to eat California oranges when Florida oranges are still moving to more distant markets!

Having arrived at a delivered price, the jobbing interests operating within a free delivery zone may add a maximum of 75 cents per box for Florida and Texas oranges and 65 cents for white grapefruit from each of the states. The jobbing mark-up is classified into

[5] Under Amendment 100 to MPR 426, effective May 5 to July 31, 1945, OPA changed the basing point for Texas white grapefruit from Homestead, Florida, to Weslaco, Texas, to encourage shipment of Texas grapefruit to eastern markets.

several categories to the extent that only the full 75 cents can be added in those cases where delivery is made in small lots to retail stores, institutions and the like. For example, if a primary wholesaler sells ex-car or ex-warehouse in less than carload lots he may add only 45 cents per box, leaving the remainder of 30 cents for the secondary jobber. To the maximum wholesaler's price independent retailers may add a 39 percent mark-up and chain stores a 36 percent mark-up in arriving at the retail price.[6] In those cases of large chain systems with direct or subsidiary commission companies only 1½ percent may be added to the delivered price in lieu of the jobbing mark-up plus the 36 percent for the chain retailer.

When one has followed the maze of computations involved in the determination of ceilings at all levels of control, one wonders if the good reception of the regulation as reported by officials of the OPA cannot be attributed to lack of interest in delving into its intricacies? Less facetiously, it appears to the writer that the chief reason the regulation has worked fairly well, judged by OPA standards, is the abundance of citrus fruits which has been on the market throughout most of the period of control.

Excessive Margins for Distribution

One of the most hotly discussed aspects of price ceilings on fresh Florida citrus fruits is that of margins allowed the distributive interests. In the case of allowances for shippers it is well known that industry cost figures were used, based on the bulk line principle. However, in the case of wholesale jobbing and retail interests, adequate data on margins were apparently lacking in the judgment of OPA. The general condition as applied to most commodities is acknowledged by officials who said, "Data on wholesale and retail prices and margins were practically non-existent and limited resources made their collection and tabulation a slow process."[7] With this situation prevailing, the OPA properly conferred with industry representatives of the wholesale and retail trade. Under such circumstances and with the limited data available, the natural process was to establish good, safe margins.

[6] As here used, independent retailers are those with an annual gross sales volume under $250,000 for a single store, or with three or less stores having combined annual gross sales under $500,000. Chain stores are individual stores with annual gross sales of $250,000 and over, or four or more stores with combined annual gross sales of $500,000 and over.

[7] Segal, S. A. and Hoffman, A. C. Food Price Control—Policy and Mechanics. THIS JOURNAL, February 1943, p. 26.

Evidence of the windfall which has accrued to jobbing and retail interests on fresh citrus under price control is indicated in Figure 1. For the period 1932–42 there is a close relationship, as would be expected, between the retail price per dozen of oranges and the percent of the consumer's dollar returned to the grower. But something drastically happened in 1943 and 1944, the two full years when f.o.b. ceilings with legal mark-ups for jobbers and retailers were in effect. While ceilings were in effect for two months in 1942, they were at the retail level only and it is apparent that jobbers and retailers maintained their normal margins.

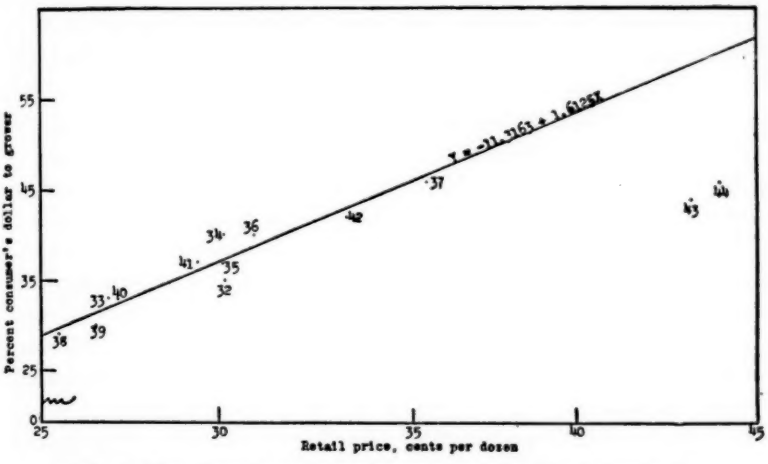

FIG. 1.—RELATION OF CONSUMER'S DOLLAR RETURNED TO GROWERS TO RETAIL PRICE PER DOZEN ORANGES, 1932–44

Source: Bureau of Agricultural Economics. United States Department of Agriculture. Unpublished data.

Only the data for the years 1932 through 1942, during which period there was no price control or at the retail level only, were used in fitting the regression line. The price per dozen is based on .0613 box of oranges.

It is recognized that the line of relationship in Figure 1 could not move upward indefinitely. At consumer prices which prevailed in 1943 and 1944 there is evidence to indicate that the line of relationship would have tended to level off. However, it would have been at a point more nearly at 55 to 56 percent of the consumer's dollar returned to the grower than the 44 and 46 percent which was returned. Of the data which were available to OPA at the time of establishing mark-ups for the distributive interests, none with which the writer is familiar would warrant the margins permitted.

Referring to Table 1, it will be observed that the mark-up allowed retailers of Florida oranges in New York City and similar points is approximately $2.00 per box. In November, 1939, the average mark-up was 92 cents and in March, 1940, $1.01 according to a study made by the Farm Credit Administration.[8] In the case of Southeastern markets, Hamilton reports that for the 1938–39 season retail mark-ups of oranges of independent stores were approximately 84 cents per box for independent merchants and 60 cents for chain stores. The comparable figures for grapefruit are 65 and 60 cents.[9]

Granting that retailers are entitled to higher absolute mark-ups than in the pre-war years, it is evident that the margins permitted are in excess of what conditions warrant. It is also apparent that the mark-ups used are more exhorbitant for Florida fruit than for California, yet the same margin applies to fruit from each area. In a study of margins made by Kuznets[10] the average retail mark-up in New York City for California oranges was $1.68 per box for the four-year period ending with 1942. Yet the average mark-up for California oranges permissible under price ceilings is $2.43 per box. For 29 United States cities[11] the average retail mark-up for the four-year period ending in 1942 was $1.28 per box, with the average annual margin fluctuating between $1.21 and $1.34.[12] The average maximum permitted by OPA for these 29 cities for California oranges is $2.33.

Equally interesting comparisons can be made between customary mark-ups and the permitted maximum margins of 75 cents on oranges and 65 cents per box on grapefruit for the wholesale and jobbing interests.

For those faced with the problem of price control, it is readily understandable that they would seek measures which would make it possible for operators with customary high margins to continue

[8] See Rasmussen, M. P., et al. Retail Outlets of Fruit in New York City. Farm Credit Administration. Bul. 52, June 1941. Per pound margins obtained by retailers as shown on page 32 were multiplied by 84 pounds to obtain the margin per box.

[9] Hamilton, H. G. Unpublished data. Department of Agricultural Economics, University of Florida.

[10] Kuznets, G. M. Statistics Relating to Marketing Margins in Oranges and Lemons. Unpublished. Gianinni Foundation, University of California.

[11] Albany, Atlanta, Buffalo, Columbus, Dallas, Denver, Des Moines, El Paso, Grand Rapids, Hartford, Houston, Indianapolis, Kansas City, Memphis, Minneapolis, Oklahoma City, Omaha, Portland (Me.), Portland, (Ore.), Providence, Richmond, Salt Lake City, San Antonio, Scranton, Seattle, Spokane, Tulsa, Wichita, and Syracuse.

[12] Kuznets, G. M. *Ibid.*

operation as in the past. Yet that very principle works to the disadvantage of producers and consumers in both the period of price control and in the period when controls are eliminated. It simply means that lower cost handlers of citrus, when supplies are short and demand great, will, and do find ways of realizing the full mark-up, even though under normal competitive conditions they operate on a much lower margin. Thus the consumer, as has been so commonly observed, pays the full ceiling price without the grower benefiting from what could have been lower handling charges under some degree of competition. Furthermore, when f.o.b. prices are below ceiling levels, the maximum retail ceilings continue to be observed in a vast majority of instances. Thus the wholesale and retail interests are not only guaranteed a high margin when fruit is at ceiling at all levels, but a vast majority enjoys a still greater windfall when prices weaken at the f.o.b. level. This latter situation is more responsible than anything else for the relatively low percent of the consumer's dollar returned to the grower during the past two years. (See Figure 1.)

Equally disadvantageous to producers and consumers when price control is abolished will be the tendency for handlers to resist reductions in margins to which they have become accustomed under the OPA. This is particularly so in certain regions where handling charges were customarily very low. For example, in the Southeastern markets the evidence shows that from 60 cents to 90 cents per box has been the customary margin taken by retailers for oranges in recent years. Yet consumer ceilings in this region have been established on a basis of a retail margin varying from $1.75 to $2.00 per box. Because of wartime demand conditions, merchants have in the main, taken this legal margin. One certainly cannot blame the merchants, but the mechanism which permits the situation to exist can be blamed.

When demand slackens in the postwar period, will not these artificially high margins, to which the trade has become accustomed, cause a far greater decrease in the grower price than has been noted in previous price declines? Some will argue that margins will be reduced on the assumption that retailers take a uniform percentage mark-up, which certainly is implicit under the OPA 39 percent margin for independent retailers. While the mark-ups may average out to a certain percentage over a period of a year, evidence indicates that in practice retailers and some

jobbers at the moment think in terms of absolute mark-ups. Also retailers in high income areas add greater mark-ups than in low income areas. One of the most comprehensive studies made on retailing of fruit sheds this light on uniform mark-ups by retailers:

"The matter of percentage gross margins is probably also greatly overemphasized insofar as the retailer is concerned. The retailer cannot pay his bills with percentages. His major personal problem is to spend his time on those products which will yield him the largest weekly total gross margin in dollars and cents. . . . It should be borne in mind that in describing what has happened, retailers commonly report results of operations in terms of percentage of gross sales. In calculating possibilities of gross profits on a given fruit, however, it is more likely that an estimate of the probable gross margin in dollars and cents per wholesale package is the factor which guides a retailer in determining whether or how much of a commodity he will stock."[13]

Inconsistencies in Community Ceiling Prices

In establishing ceilings on fresh fruits and vegetables, growers have been chiefly concerned with f.o.b. prices. However, there has been increasing interest in the manner in which these ceilings are finally reflected in the price to the consumer. The mechanics of this aspect of price control can best be judged by a study of community ceiling price announcements as issued by the various offices of the OPA. As of December 7, 1944, the author collected such announcements for fresh fruits and vegetables for all regions in the United States. For Florida oranges and white grapefruit these are summarized in Tables 2 and 3 for those states in which these fruits were priced.

In issuing community ceiling prices two types of announcements are made. One is known as "urban," which is issued weekly and in which an attempt is made to reflect the wholesale price then in effect. Another is known as "rural," which is issued monthly and reflects ceiling prices on the assumption that at all times and levels fruit will be selling at ceiling.[14] In practice there is little variation between the two except an attempt to reflect differences in additional charges for transporting outside of free delivery zones by jobbers, which is the usual case in "rural" announcements.

One of the chief functions of community ceilings is to provide appropriate differentials in retail prices to reflect differences in transportation costs from areas of production to destination. If

[13] Rasmussen, et al. *Op. cit.*, pp. 33–35.

[14] Large chains or stores doing an annual volume of business in excess of $250,000 are required to compute their ceilings by adding 36 percent to the cost of their largest purchase of the previous week.

TABLE 2. SUMMARY OF 163 OPA COMMUNITY CEILING ANNOUNCEMENTS ON FLORIDA ORANGES FOR WEEK BEGINNING DECEMBER 7, 1944[a]

State[b]	How priced (Number of announcements)			Minimum weight per dozen size 200[c]		Maximum price per dozen size 200[c]		Maximum price per pound	
	Pound only	Dozen only	Pound and dozen	Range	Average	Range (cents)	Average (cents)	Range (cents)	Average (cents)
				lb.-oz.	lb.-oz.				
Massachusetts		1		—	—	0	51	—	—
Connecticut		1		0-0	4-6	0	50	—	—
Maine		2		—	—	13	53	—	—
Vermont		1		—	—	0	56	—	—
New Hampshire		2		—	—	5	54	—	—
New York	5	8		1-2	4-10	7	49	0	10
Delaware		1		—	—	0	50	—	—
D. of C.	1			—	—	—	—	0	9
New Jersey	5	1		0-0	4-6	0	49	1	9½
Pennsylvania	6	4		1-7	5-0	5	49	1	10
Ohio	1		5	0-0	5-0	4	51	1	9½
Kentucky	1		5	0-0	5-0	5	45	1	8½
Michigan	4		5	0-0	5-0	3	47	1	9
West Virginia		8		0-0	5-0	4	48	—	—
Georgia			7	1-7	4-11	9	42	2	8½
Alabama			7	0-0	5-0	9	39	3	8½
Florida	2			—	—	—	—	0	8
Mississippi			2	0-0	5-2	7	44	0	8
N. Carolina			3	0-4	4-13	2	39	1	7½
S. Carolina			2	0-0	5-0	5	43	1	8½
Tennessee	4			—	—	—	—	1	9½
Virginia			4	0-6	5-0	2	45	0	9½
Kansas	4			—	—	—	—	2	11
Louisiana	3			—	—	—	—	2	9
Missouri	1			—	—	—	—	0	9
Oklahoma	4			—	—	—	—	0	10
Illinois	9			—	—	—	—	3	10½
Iowa	5			—	—	—	—	1	10½
Nebraska	6			—	—	—	—	2	10½
Minnesota	6	1		—	—	0	49	1	11
S. Dakota	2			—	—	—	—	1	11½
Wisconsin	7	1		—	—	0	52	1	9½
Idaho	2			—	—	—	—	0	10
Washington	14			—	—	—	—	0	10

— Information not given or not applicable as the case may be.

[a] Some of the announcements are "rural" ceilings and apply for the whole month of December. Such is the case, for example, with most of those for the New England states, in which one ceiling may apply to the entire state.

[b] Only those states are listed in which Florida oranges were priced. States are arranged by OPA regions.

[c] The size refers to the number of oranges in a 1⅗ bushel box.

TABLE 3. SUMMARY OF 110 OPA COMMUNITY CEILING ANNOUNCEMENTS ON INTERIOR FLORIDA WHITE GRAPEFRUIT FOR WEEK BEGINNING DECEMBER 7, 1944[a]

State[b]	How priced (Number of announcements)			Minimum weight per piece size 54[c]		Maximum price per piece size 54[c]		Maximum price per pound	
	Pound only	Piece only	Pound and piece	Range (oz.)	Average (oz.)	Range (cents)	Average (cents)	Range (cents)	Average (cents)
Massachusetts		1		—	—	0	13	—	—
Connecticut		1		0	24	0	14	—	—
Maine		2		—	—	4	14	—	—
Vermont		1		—	—	0	15	—	—
New Hampshire		2		—	—	1	14.5	—	—
New York	5	8		5	19	1	13.5	1	10
Delaware		1		—	—	0	14	—	—
New Jersey	5	1		—	18	0	13	1	10
Pennsylvania	6	3		0	21	1	13.5	1	10
Ohio	1		5	1	19	2	12	1	9
Kentucky & Indiana	1	1	4	1	19.5	1	11.5	1	9.5
Michigan	7		2	0	19	2	11	1	9
West Virginia		8		0	19	2	12	—	—
Georgia		1	6	0	20	2	11	2	8
Alabama			7	1	20	4	11	2	9
Florida	2			—	—	—	—	0	7
Mississippi			2	0	22	0	10	0	7
N. Carolina			3	0	20	2	10	0	7
S. Carolina			2	0	20	2	11	1	8.5
Tennessee	2		2	0	20	1	12.5	1	9
Virginia			4	0	20	1	12.5	1	10
Kansas	1			—	—	—	—	0	10.5
Louisiana	1			—	—	—	—	0	10
Oklahoma	1			—	—	—	—	0	11
Illinois	5			—	—	—	—	3	10
Nebraska	1			—	—	—	—	0	10
Minnesota	1			—	—	—	—	0	8.5
Wisconsin	4			—	—	—	—	2	8

— Information not given or not applicable as the case may be.

[a] Some of the announcements are "rural" ceilings and apply for the whole month of December. Such is the case, for example, with most of those for the New England states, in which one ceiling may apply to the entire state.

[b] Only those states are listed in which Florida white grapefruit were priced. States are arranged by OPA regions.

[c] The size refers to the number of grapefruit in a 1⅗ bushel box.

there is merit in attempting to show such differentials, it would seem that some uniformity in the mechanics followed could have been in effect at the end of almost two years of price control on

citrus. The summary of orange retail ceilings for those states in which Florida oranges were priced reveals anything but uniformity or consistency (Table 2). In the first instance there was no uniformity in the method of pricing. In the areas primarily served by California or where Florida competition was at a minimum, pricing was mainly by the pound. In the New England and New York[15] regions, dozen or per piece pricing was most prevalent. While either method is permissive under retail regulations MPR 422 and MPR 423, the latter practice was in direct evasion of Judge Vinson's directive to OPA of November 17, 1943. Why OPA should have abided by all other requests of Judge Vinson and ignored this one is difficult to explain. Perhaps a political analyst could give us the answer.

When prices were announced on a dozen or per piece basis, minimum weights by sizes were usually shown. The purpose was to prevent merchants from pricing small sizes at the larger size prices. Yet in many instances these weights were set so low as to permit merchants to sell a size 288 orange for size 216, if they chose to do so. In such cases they not only had their legal mark-up but an additional 6 dozen of oranges to sell at the price of a 216. Such could not happen under pound pricing. Obviously, the lowest of minimum weights is not reflected in the averages by states, but the range in weight among ceiling announcements is some indication. One wonders why there should be a variation of 1 pound and 7 ounces in a dozen of size 200 oranges in Pennsylvania or why, on the average, a dozen of such oranges should weigh 10 ounces less in New Jersey than Pennsylvania? In some instances such discrepancies may result from mechanical errors and lack of coordination, but many are due to administrators who are sensitive to a retailer now and then complaining about a low weight package, when it is the average weight that should be considered.

As was previously mentioned, the real purpose of numerous community ceilings is to reflect freight differentials from point of origin to areas of consumption. This is to insure that a commodity will be widely distributed and not concentrated in certain markets because of price control. Apparently OPA did not wish to recognize that historically in periods of short supply or high prices starvation is the rule rather than the exception in certain markets. This is

[15] Since December 7, 1944, all regions except New England and the St. Paul-Minneapolis area, have shifted to pound or dozen and pound pricing. This was accomplished only after much prodding by the industry.

true in low income and rural areas. If mechanics are to be provided to insure equitable distribution, has the objective been obtained? Certainly the differentials in price by states do not indicate such. As of December 7, 1944, one wonders at the basis for an average of 9 cents per pound of oranges in Michigan and an average of 9½ cents for Ohio. Or why should the average price for Virginia be one-half cent higher than for Michigan? Again, why should there be a price of 9½ cents per pound in Wisconsin and 10½ for Illinois? Florida oranges in Idaho (probably none got there) were priced at the same average retail figure as in New York, Pennsylvania and Oklahoma. One also wonders, even admitting that it costs to job fruit into small towns, why there was a retail price ceiling range of 3 cents per pound or $2.52 per box within Alabama (Table 2).

For Florida white grapefruit the pattern is equally as bad. The per pound price was the same in Wisconsin as in Georgia. Nebraska was the same as Pennsylvania, New Jersey, New York and Virginia. Illinois merchants on the average could charge 2 cents a pound more for grapefruit than Wisconsin merchants. Within Illinois there was a variation of approximately $2.20 per box among communities (Table 3).

With such being the case, can one successfully defend the thesis that neat differentials must be worked out, in which a multitude of workers is involved, in order to insure equitable distribution? More equity could have been obtained had the country been zoned into about two or three areas with a uniform ceiling established for each area. Then market forces could have played some part in getting equitable distribution. Instead it appears as though unknowingly and unintentionally on the part of OPA, distribution has been hampered.

To some extent these discrepancies may be attributed to differences resulting from "urban" and "rural" community ceilings. Proponents of "urban" pricing have shown much concern over the "great" inflationary tendencies if "urban" ceilings are not used to reflect current wholesale prices. Yet one wonders if the trouble of computing prices weekly, instead of monthly and without sampling wholesale prices as is done for "rural" ceilings, is worth the effort and the consequent disruption of market forces. In New York City, one of many places where the "urban" technique has been practiced, it appears that the "rural" method would have been effective. In Figure 2, three different retail price ceilings are converted to a box basis, for New York City. Line (1) represents OPA

"urban" community ceiling prices. Line (2) is a "rural" ceiling computed by assuming full f.o.b. ceilings and the maximum mark-ups permitted under MPR 426 and MPR 423 for distributive interests. Line (3) is based upon the New York auction price and reflects the same mark-ups as for line (2). Other than for a reflection of the late November decline in prices, the OPA "urban" community ceilings might better have been handled on a "rural" basis. The data also show that wholesale prices were not pushing ceilings as consistently as some officials seem to believe.

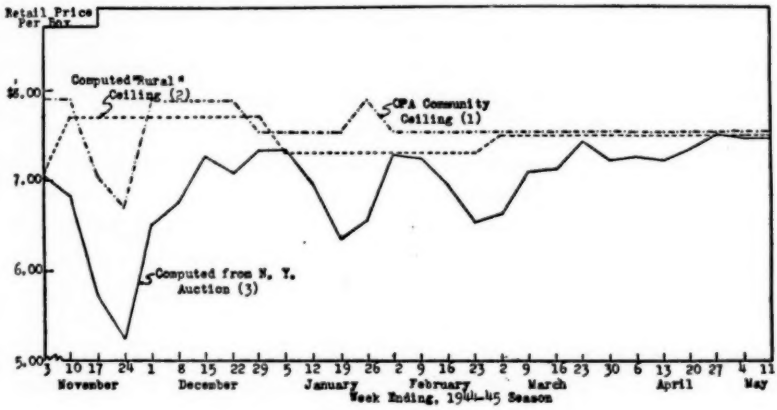

FIG. 2. COMPARISON OF OPA "URBAN" COMMUNITY CEILING PRICES FOR FLORIDA ORANGES IN NEW YORK CITY WITH TWO OTHER METHODS OF COMPUTATION, 1944–45 SEASON THROUGH MAY 11, 1945

(1) OPA ceiling prices per 5 pounds converted to a box of 84 pounds.
(2) Computed by same method as shown in Table 1 with adjustments for damage suffered in Oct. 19, 1944, hurricane.
(3) Weekly N. Y. auction price plus maximum wholesale mark-up of 58 cents 17 of 75 cents taken through auction) plus 39 percent markup for retailer.

There are at least two disadvantages to "urban" ceilings. One is that local pricing officials in sampling wholesale prices will get prices out of line between two or more community pricing areas which are in the same market area.[16] The other is that it needlessly entails additional work on pricing officials. The more detail involved, the more opportunity there is for mechanical errors which not infrequently cause confusion in the trade.

However, dismal the outcome of the mechanics followed in establishing community ceiling prices has been, in all fairness it

[16] See Tables 2 and 3.

should be recognized that a goodly portion of the discrepancies mentioned are neither deliberate nor do they show lack of good intentions on the part of pricing officials. In fact, the writer would like to pay tribute to the earnestness and sincerity of employees in the regional and national offices of OPA in their attempt to handle the complicated job handed them by policy makers in the Washington office. The record merely reveals that the objectives in the regulation are greater than a mechanical system can attain even in a two-year period.

Price Ceilings Should Be at Retail Level Only

What then is the alternative? Many would quickly reply that fresh fruits and vegetables should never have been brought under price control. Admitting that there are excellent arguments favoring this thesis, they lie outside of an examination of the framework within which a commodity is controlled. The most feasible alternative was first advanced by the citrus industry and at a later date by the apple industry of the nation. *It is that ceilings on fresh fruit and vegetable perishables be set at the retail level only.* To each suggestion OPA officials stated that it defied the experience of price control. The industry recommended that ceilings be computed in much the same manner as has been done, except once retail levels were computed prices be "rounded" for large geographical areas and all other levels of control be ignored.

The major criticism of a retail ceiling only is that it will squeeze the distributive interests. This is readily granted and would be valid if one assumes that fresh fruits and vegetables were in short supply throughout the year or if there were no violent fluctuations in supply within very short periods. But the facts do not justify such an assumption. In much of the period of price control on fruits and vegetables, supplies have been such as to result in below f.o.b. ceilings. At times, f.o.b. prices have fallen below the cost of harvesting on some vegetables. However, retail prices, as has been so universally observed, have generally held at ceiling giving such a generous margin to distributors that they could well afford to be squeezed in periods of short supply. On the matter of squeezes, Segal and Hoffman make a most illuminating statement, though they were no doubt considering commodities where squeezes are more serious than for fruits and vegetables.

"Under price control a squeeze was almost universally, and often correctly, attributed to the seller's maximum price. But a great many sellers have

tended to forget that the price control squeeze has to a considerable extent merely replaced previous squeezes. Apparently, it did not matter that a given seller had been losing money for years. With the advent of price control the onus was promptly fixed on the Office of Price Administration."[17]

It would thus appear that OPA could not withstand the "squeeze" complaints. As a consequence, the price ceiling mechanism on fresh fruits and vegetables bears a striking resemblance to the NRA program. Ceilings, as now established, not only protect but they keep inefficient distributors in business. The OPA has repeatedly stated that price control insofar as possible must not disturb the normal channels of distribution and trade practices. One of the most normal practices in the fruit and vegetable trade has been for a large number of distribution interests to go broke each year. With the margins granted and the legal protection given this opportunity has been largely denied.

In non-perishable commodities where the over-all supply situation is such as to afford a continuous squeeze on wholesalers and retailers, the validity of price control at levels in addition to retail is well recognized. But in the case of fresh fruits and vegetables, there are such violent shortrun fluctuations in supply as to warrant flexibility rather than fixity of ceilings at the f.o.b. or farm level. Such flexibility can be obtained with retail ceilings only. Throughout a season equity will be obtained by the distributor, since low margins because of squeezes in periods of short supply will be offset with high margins in periods of greater supply. In the case of citrus for the past two seasons, the length of the period when prices at the f.o.b. level were below ceiling levels were such as to permit distributors to obtain adequate margins with a retail ceiling only.[18] It is readily granted that at the beginning and the end of the citrus season distributors, both wholesale and retail, would have their margins squeezed. But those periods would be short in comparison with the long periods in which country shipping prices would be below ceiling. Furthermore, these seasonal squeezes are the rule rather than the exception in the normal handling of fruit and vegetable perishables.

Equity for the grower is more nearly realized with a retail ceiling only, because f.o.b. prices can fluctuate to some extent in accord-

[17] Segal and Hoffman. *Op. cit.*, p. 25.

[18] With f.o.b. prices which have prevailed, consumers might have paid, on a season average basis, less for citrus fruit without any ceilings than under the "sticky" influence of community ceilings.

ance with widely fluctuating supplies. Producers of fresh fruits, and more particularly vegetables, rely upon prices over a short period for the success of a season's operation. For example, a producer of snap beans with an estimated picking season of four to six weeks usually contemplates a week or more of good prices to carry the bulk of his expenses for the season. If this price is forbidden and for the remaining three to five weeks he has to sell at below ceiling levels, which is so frequently the case, equity as to his customary method of operation has been denied. Yet when denied, he customarily finds his produce, which has sold well below f.o.b. ceilings going at, or even above, ceiling levels to the consumer. To a lesser but equally real extent the same situation prevails for all fresh fruits. If OPA policy making officials could see the wisdom and the fairness to both distributors and producers in a retail ceiling only, and then adopt it as a policy for all fresh fruit and vegetables they would have to spend far less time before congressional investigating committees and industry committees. Such a move would be vigorously opposed by certain elements of the wholesale and retail trade. In fact, there is such comfort in operating under a profitable government granted monopoly that one frequently encounters propaganda to make price control permanent.

Conclusions

After almost three seasons of price control on fresh citrus there is still a need for reconciling objectives with suitable mechanics. The present regulation provides for excessive margins to the wholesale and retail trade. Furthermore, the practice of establishing several levels of control, which is a part and parcel of excessive margins, is not suited to production and marketing problems confronting producers of fresh fruit and vegetables. A more suitable mechanism would be to accept retail ceilings as now established, round them for broad geographic areas, and abolish all other levels of control. This technique would permit equitable margins, on a seasonal average basis, to wholesalers and retailers in view of the present volume of production. It would give producers a flexible f.o.b. price which is essential in fresh fruit and vegetable production. Finally, consumers would receive as fair treatment as under the complicated ceilings now in effect, since, to a large degree, f.o.b. prices below ceiling levels are not reflected in the consumer price.

A PROPOSED WORLD TRADE BOARD FOR EXPANDING INTERNATIONAL TRADE

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THERE has been a great deal of discussion in recent months of the need for wider international economic collaboration and a greatly expanded world trade. How this possibly might be brought about is the central focus of this discussion.

When the war ends the economies of all the important industrial and trading nations of the world will be in varying degrees of dislocation and maladjustment. The belligerent nations particularly, will find their resources preponderantly geared to war purposes and generally under strict allocation and control. Production will be greatly overextended in some lines, pushed to uneconomic limits in others, and overreduced in still others as a result of the intercommodity distortions and geographic shifts in demand arising out of the war. Stocks of a number of strategic raw materials also will be in excess supply; prices, wages, and rents will be under control; and both producer and consumer subsidies as well as rationing of many commodities will be in effect in most countries.

International trade likewise will be in a strait-jacket with import quotas, export embargoes, and licensed or state trading generally prevailing. Price relationships between nations will be greatly distorted, foreign exchange rates unstable, and inflation, in some countries, proceeding unchecked. All the important belligerents, furthermore, will have increased their internal debt; some both their internal and foreign debt; and others will have shifted in status either from a creditor to a debtor nation or vice versa. Moreover, most of the countries will still be saddled with the same restrictive laws, tariffs, milling restrictions, quotas, embargoes, exchange controls, and other restrictive devices that were in effect in the period just preceding the outbreak of the war. Some countries, however, will be in a position to start virtually with a clean slate as a result of new constitutions or revamped governmental structures.

In addition to this intricate array of controls and maladjustments, practically all nations will be faced with certain special problems. One immediate problem that will confront the United States, for example, is how to make available capital and credit to other member states of the United nations under such conditions

and terms that will contribute most effectively to their recovery and reconstruction and to an expansion in world production and trade. Closely related to this is the additional problem of controlling or guiding the spending in the United States of credit advanced or of large dollar balances already owned by certain nations, without unduly disturbing or up-setting our own internal price and credit structure. An even more important problem is the terms and conditions to be negotiated with other participating nations with respect to the disposition of the whole Lend-Lease question. Other nations will have problems equally intricate and important to them.

Presumably it will be the policy of most nations to relax and eventually remove altogether, those controls which have been induced directly by the war. Such internal wartime devices as supply and allocation control of materials, ceilings on prices, wages, and rents, consumer rationing, etc., undoubtedly will be removed just as rapidly as conditions will permit. There also likely will be a relaxation of shipping and navicert controls, and of war-induced quotas and embargoes, as well as of all of the types of controls exercised by the Joint or Combined Boards during the war.

It is not these types of controls, however, with which there is so much concern when considering the problem of expanding world trade. To be sure, they will influence the international movement and exchange of goods so long as they are in effect; but since, for the most part, they are based on emergency legislation their effects necessarily are likely to be temporary. The problem rather centers in those controls and trends of a more permanent character which had been established and more or less accepted as national policy in the several nations in the years preceding the outbreak of the present conflict.[1]

During these years, and even before, the general trend throughout the world, however, had been toward increased management and control not only of the various internal economies, but also of international trade itself. In the United States, for example, this trend toward central management and control historically was first exercised by the business group through the organization of monopolies, holding companies, interlocking directorates, etc. This

[1] In this connection it should be remembered that the decade of the 1930's was, in general, a period of depression. Some nations undoubtedly looked upon some of the controls instituted during these years only as temporary expedients to meet the highly abnormal and unstable conditions that prevailed.

trend toward collective action and group control in business was followed later in labor and agriculture; in the former by the enactment of state and federal legislation relating to child labor, minimum wages and hours, and other conditions of employment, as well as by the establishment of strong national labor organizations, craft unions, etc., and in the latter also through organizations and by the enactment of strong facilitating federal legislation. Much of the same type of development took place in other democratic nations. In the dictator nations the developments in these directions were even more pronounced. These internal controls in most all capitalistic countries, furthermore, were accompanied and supplemented by numerous external control devices, tariffs, bilateral trading, international cartels, etc.

Whether or not we have an expanding economy and a greatly accelerated world trade in the postwar era will depend, in major degree, upon what we and the rest of the world do about these things.

Which Direction Will We Go?

Will the United States and the other nations of the world maintain these various internal controls and resume the extreme nationalistic and autarchic policies followed just preceding the outbreak of the war? Or will we move toward freer trade and wider international economic collaboration? If the move is toward wider economic collaboration will the governments of the respective nations still exercise considerable control and management or will they move in the direction of the type of policies and trading that generally prevailed in the period a quarter of a century or more just preceding World War I?

Much of the discussion of this subject in recent months has been based on the expressed or implied assumption that the world will move in the direction of freer trade and wider international economic collaboration. The evidence that such a development will come about in the immediate postwar years, however, is by no means conclusive. There are some grounds for believing, to be sure, that the world will not go back to the extreme autarchic policies of the period immediately preceding the outbreak of the present war. The declarations and commitments in the Atlantic Charter, and the Master Lend-Lease Agreement, and, more recently, the declarations and proposals of the United Nations made at Hot Springs,

Bretton Woods, Dumbarton Oaks and San Francisco all point in this direction.

On the other hand, there have been other developments that point to a continuation of certain of these controls at least in the immediate post-war years. The United States, for example, has made definite commitments to maintain agricultural prices for a number of products for two years after the end of hostilities. Britain also is committed to a definite program covering production and prices of certain products which carries through 1948, and, in addition, has concluded certain long-term contracts with overseas suppliers. Canada, likewise, has recently established a board with fairly general authority to support agricultural prices in the post-war transition period. Other countries either have state trading as a continuing cornerstone of their national economies or have resorted, or will resort, to it in handling certain commodities.

It may be, of course, that commitments such as these will be withdrawn as soon as the difficult adjustment from war to peace has been made, But regardless of how desirable some may think this to be, there is not much evidence, at least in the United States, that this is likely to happen anytime soon. We, of course, undoubtedly will have to modify and reduce downward some of our extreme agricultural loan and support price rates, or possibly even to modify our method of approach to the agricultural problem, but we are not likely to reverse over night an agricultural policy that has been evolving for the past quarter of a century.

On the industrial and labor fronts the situation appears to be pretty much the same. There certainly is no assurance that we will reverse the trend toward centralization and collective action and return to the type of policies that generally characterized the economy prior to World War I. The trend, in fact, in all of the important industrial nations of the world during the past several decades has been in the opposite direction. That there will be a rapid reversal of this trend in the immediate period ahead seems remote indeed.

If the nations of the world then are not likely to go back either to the extreme autarchic policies of the immediate prewar period or to the relatively free-trade policies of the last century, what policy will they pursue? Obviously, it will be a policy that falls somewhere in between these two extremes.

It would appear reasonable to assume, in the light of develop-

ments at San Francisco, that the world is definitely headed toward much closer political and economic collaboration among nations than prevailed before the war. This does not mean, however, that the individual nations necessarily will relinquish internal controls or forego making their own decisions on internal policy. It means rather that individual nations will tend increasingly to develop their internal policies and programs in a general framework of international collaboration and in line with mutually agreed-upon international policies and programs.

How, then, can an expansion in world trade be brought about under a system of internal controls of the several national economies? Under what conditions will the several nations be willing to modify and adjust their tariffs, their quotas and other external and internal controls so that an expansion in production and trade can be achieved?

Some Approaches That Have Been Tried or Suggested

Various proposals have been made for expanding international trade. Among the many approaches that have been suggested probably the one that has been most widely discussed and publicized, particularly in the United States and Britain, is the proposal which so long has been accepted and advocated by most economists. This proposal, as is well known, calls for a general lowering or abolishing of traiffs, quotas, embargoes, and other restructions to trade and a general movement toward free exchange of goods between countries. In theory, under this system, each country would produce those products in which it had either an absolute or comparative advantage and would exchange them for the products most efficiently produced in other countries. Presumably, such an exchange would bring about an increase in trade advantageous to all countries and at the same time promote the most efficient utilization of world resources. Although unilateral action is sometimes implied, the implementation of this approach presumably would be accomplished through international conferences or multilateral conventions in which the several nations would sign a blanket agreement to decrease or abolish tariffs, eliminate trade restrictions and discriminatory trade practices and generally move toward a freer exchange of goods.

A second approach and one that has been used by the United States in recent years, is the reciprocal trade agreement approach.

This, unlike the approach just discussed, involved the negotiation of agreements country by country. These agreements in addition to the general provisions with respect to fair trade practices, discriminatory treatment, etc., focus directly upon individual commodities and products and indicate specifically the changes in tariffs, quotas, etc., agreed to with respect to each. Although these agreements are negotiated bilaterally, their benefits are extended multilaterally to all like-minded nations through the most-favored-nation clause.

A third approach is the commodity agreement approach. These agreements are on an individual commodity basis but usually are negotiated multilaterally. They have been traditionally used by groups of producer nations for commodities when the supplies available for export have tended to outrun the quantities the importing nations were willing to import. Through their use the export nations have sought to stabilize or increase the price of such commodities either through control of exports, which were sometimes accompanied by efforts to control production, or through some buffer-stock arrangement of storing and disposing of the surplus. In more recent years an attempt has been made to broaden this type of agreement to include importing as well as exporting nations. The current international wheat agreement to which we are a party typifies the new approach.[2]

Other approaches that nations have used to expand their trade are straight bilateral trading, or the establishment of custom unions, or negotiation of empire preferential agreements. Such benefits that derive from these types of arrangements accrue only to the participating nations since they all exclude the most-favored-nation clause.

An additional approach is outright state trading. This approach, of course, is used exclusively by Russia today because of the nature of her state controlled economy It was used extensively by the Axis Nations during the 1930's and in varying degree by most all nations in time of war. State trading in specific commodities also has been resorted to by many nations on numerous occasions to implement two-price systems by subsidization and dumping and to carry on outright barter schemes.

[2] Proposals for an international organization to deal with commodity agreements have been under extended discussion between the United States and the United Kingdom and were recognized in the Hot Springs Resolutions and the proposals for Food and Agriculture Organization.

Of these approaches the first three appear to offer the most promise for bringing about a sustained expansion in trade by the capitalistic countries. The situation with respect to Russia, of course, is different. By the very nature of her economy she necessarily will continue state trading.

Obviously, outright bilateral agreements without the most-favored-nation clause to extend benefits to other nations are not likely to encourage an expansion in the trade of the nations not parties to the agreements. To the extent that such trading results in expanding production in the two countries of commodities that could be produced more advantageously elsewhere, it actually may retard rather than encourage the total trade of the world. Empire preferential and custom union schemes are an extension of the same idea and hence fall into the same category. They obviously may promote trade temporarily among the nations that are parties to the agreement. However, their effect upon the trade of the rest of the world will be negative so long as they fail to extend the lowered tariffs and other concessions multilaterally.

Conceivably under a system of state trading participated in by all nations it theoretically would be possible to bring about an expansion in world trade and do it just as rapidly (or possibly even more so) than under a system of private trading. Or the same thing might be accomplished by a combination of state and private trading. However, there now is little evidence to indicate that the capitalistic countries have any intention of establishing a state monopoly of foreign trade in all commodities; although such trading in certain commodities in some countries may be carried on. Should the Bretton Woods proposals be turned down or should the international security organization not work out as well as now anticipated, it is possible that we may see a great deal of state trading in some countries. Unless the state trading that is done by the capitalistic countries is conducted in a framework of agreed international collaboration, however, it could easily thwart rather than encourage an expansion in world trade.

If then neither straight bilateralism nor state trading are the direction we want to go, what about the other approaches? What possibilities do they hold for an expansion in world trade?

Multilateral conventions and bilateral reciprocal trade agreements with the most-favored-nation clause, of the character discussed in the first two approaches, obviously, are in the right direc-

tion. They both recognize the need for a lowering of tariffs and a general relaxing of restrictions throughout the world if an expansion in trade is to be achieved. They both also recognize the cooperative nature of the undertaking, that is, that their provisions must have multilateral acceptance, and be non-discriminatory in nature.

While there is not much probability that the nations of the world are going suddenly to relax all their tariffs and other controls and go over entirely to a free trade basis, there are many indications that they want to move toward freer trade than prevailed in the inter-war period. However, the lengths to which they possibly will go will depend in considerable degree upon the methods of negotiation that are used. A "One Big International Conference" approach to get all nations to agree to a blanket reduction in all tariffs, and to a discontinuance of all quotas, subsidies and other restrictions simply is not feasible or practicable. All tariffs and other controls obviously are not equally restrictive. Furthermore, few, if any, countries are likely to abolish all tariffs completely. Many will want to retain, and rightfully so, many tariffs for revenue purposes only. Others, particularly those countries which have felt the influence of the Industrial Revolution least and which are now particularly desirous of promoting wide industrial expansion within their own borders, may want to increase some of their tariffs and institute temporarily other controls in order to equalize the competitive advantage now enjoyed by the more industrially advanced nations. Recognizing these elements of the problem, each nation consequently will want to know in specific terms what it is getting in return for what it gives up. In other words, each nation will be disposed to negotiate on a quid pro quo basis. This clearly is not likely to be accomplished, as it were in one sitting, at a big international conference. It will require negotiation of many specific items and necessarily will extend over a considerable period of time.

This points to a method of negotiation similar to that used in the reciprocal trade agreements, except that it would be on a multilateral rather than a bilateral basis. It should be possible to move in this direction and still keep the negotiations within manageable proportions. The trade liberalizing effects of an agreement negotiated in this way could be extended to countries not participating in the negotiations by the inclusion of the most-favored-nation clause.

Expansion in either total production or trade obviously may involve the redirection and reorientation of production in the different countries as well as either the contraction or expansion of individual commodities. It also will involve measures for handling products or stocks that are in excess supply. The international commodity agreement can be a useful device for these purposes. But such agreements need to be geared into and made an integral part of an over-all multilateral arrangement involving agreement upon imports, exports, (including quotas, if any) tariffs and exchange rates, shipping arrangements, etc. with respect to all goods and services if they are to contribute most effectively to an expansion in total production and trade.

Commodity agreements negotiated in isolation (i.e., without due regard to other related problems of the economy) have tended in the past to restrict rather than expand production and trade. These agreements were negotiated almost exclusively by exporting nations for specific commodities with the primary objective of reducing production and increasing price or of stabilizing and disposing of excess supplies. As such they were restrictive in character and largely ignored the interests of importing nations. By establishing production and export quotas, largely on historical bases, they, furthermore tended to freeze existing patterns of production and to retard, if not prevent altogether, desirable shifts in output from high cost to low cost areas.

In the recent past, as previously indicated, an attempt has been made to free such agreements of some of these bad features, particularly to bring consumer as well as producer nations into the negotiations. Our present wheat agreement is a case in point. But if this agreement is to contribute materially to a total expansion in world trade in wheat, it must be accompanied by a redirection of resources away from wheat to lines of production that are more economic in the principal importing countries and in some of the exporting countries as well. Otherwise it simply may result in the perpetuation of a slightly modified status quo.

Before either importing or exporting nations can be induced to make such shifts, however, they must have assurance that there are profitable outlets for the products to which they would turn. They, likewise, cannot overlook the effect such shifts would have upon their balance of payments and upon their general exchange position. Such questions can be resolved only when agreements are

negotiated in a framework that takes all of these related problems into account, hence, the importance of gearing such agreements into wider multilateral and multi-commodity arrangements. Handled in this way, commodity agreements can make a real contribution to a total expansion of production and trade.

An Alternative Approach

If the foregoing appraisal of the several proposals for expanding trade is correct in its major essentials, what suggestions does it offer for developing a more effective approach to the problem? The discussion which follows is directed to this question. It attempts to show how elements of several of the approaches which have been discussed in the preceding pages can be integrated to form a unified and consistent program for the expansion of international trade.

Basic Assumptions—Underlying this plan of action are certain basic assumptions. The first is that an effective international political organization to maintain the peace and prevent future aggression will be established, along the lines laid down at the Dumbarton Oaks Conference and at San Francisco; and further that the several nations, relieved of fear of aggression, will be willing to abandon nationalistic policies of self-sufficiency and to cooperate on economic matters.

Along with this assumption of wider political and economic collaboration is a second assumption that the several nations of the world will be reluctant to relax controls until they have reasonable assurance of the effectiveness of the political organization for maintaining the peace, hence, the lowering of tariffs and other restrictions to trade, both during the transition period and later, at best will be a slow process; and, further, that progress will be more rapid through a quid pro quo bargaining process than by an over-all blanket approach.

Related to this is a third assumption that since every nation must guard continuously its exchange position (ultimately balancing total imports of goods and services with its exports) trade arrangements involving changes in tariffs, quotas, etc. need to be negotiated in a framework in which all of the related problems of the economy are taken into account.

Since agricultural and industrial raw materials make up such a large proportion of the international trade of the world, there is the

further assumption that a program which will provide for the orderly handling and disposal of such materials temporarily in excess supply and which will go further and seek to prevent such supplies from accumulating in the first place (through shifts, in production from high-cost to low-cost areas and through promoting the exchange of products most efficiently produced in one country with those produced in other countries) not only will go a long way toward stabilizing the price and increasing the trade and consumption of such materials but will promote, at the same time, total trade and employment throughout the world.

With these assumptions in mind, let us now consider how wider economic collaboration might be achieved among the several nations of the world to bring about an expanded world trade.

Section 7 of the Master Lend-Lease Agreement the Starting Point—

The first hurdle to overcome in achieving an expanded world trade is to get the nations of the world to agree to work together to this end. The basis of such an agreement is to be found in Section 7 of the Master Lend-Lease Agreement. Section 7 read as follows:

"In the final determination of the benefits to be provided to the United States of America by the Government of.....in return for aid furnished under the Act of Congress of March 11, 1941, the terms and conditions thereof shall be such as not to burden commerce between the two countries, but to promote mutually advantageous economic relations between them and the betterment of world-wide economic relations. To that end, they shall include provision for agreed action by the United States of America and the Government of....., open to participation by all other countries of like mind, directed to the expansion, by appropriate international and domestic measures, of production, employment, and the exchange and consumption of goods, which are material foundations of the liberty and welfare of all peoples; to the elimination of all forms of discriminatory treatment in international commerce, and to the reduction of tariffs and other trade barriers; and, in general, to the attainment of all the economic objectives set forth in the Joint Declaration made on August 14, 1941, the Atlantic Charter.

"At an early convenient date, conversations shall be begun between the two Governments with a view of determining, in the light of governing economic conditions, the best means of attaining the above stated objectives by their own agreed action and of seeking the agreed action of other like-minded Governments."

With the United States and fifteen other leading nations of the world already parties to this agreement, it furnishes at once an acceptable basis for international economic collaboration. The first step, hence, is to get *all* the United Nations to agree to accept

its provisions as the basis of their international economic policy.

International Trade Conference and World Trade Board

Probably the most feasible way to get all of the United Nations to adhere to this agreement would be through an international trade conference, which could be called, after suitable preparation,[3] by the United States or some other interested nation. Such a conference would attempt to accomplish three things:

(1) To get *all* the United Nations to accept as a cardinal principle of their national policy the obligation to adopt and put into effect the measures needed (a) to expand total production, employment, and the exchange and consumption of goods, (b) to eliminate all forms of discriminatory treatment in international commerce, (c) to reduce tariffs and other barriers to trade, and (d) to take such other steps (including the registering and regulation of cartels) as may be needed to the general attainment of the economic objectives set forth in the Atlantic Charter and in Section 7 of the Master Lend-Lease Agreement.

(2) To explore ways and means, and, if possible, reach agreement upon general methods and procedures for managing and disposing of excessive stocks of agricultural and industrial raw materials that may have accrued and be in existence at the end of the war, or that may thereafter accrue, so as to insure their orderly movement into trade and consumption and to prevent them from becoming a burden to international commerce.

(3) To set up a permanent International Trade Council or World Trade Board to implement these purposes.

No attempt would be made at this conference to negotiate specific agreements, to adjust any specific tariff rates or import quotas or even to agree upon blanket ajustments in these and related items. Attention rather would be centered upon reaching agreement upon a broad general basis for economic collaboration and action in the field of international trade.

Organization and Membership of the World Trade Board.—The accompanying functional chart shows the general organization of

[3] A great deal of effort has been devoted to the problems of trade and commercial policy after the war. Numerous committees have been set up in the United States (both within and without Government) as well as in some of the other nations to consider and make recommendations on policy with respect to many of the more important issues involved. These materials and recommendations would furnish an excellent point of departure for the discussions at such a conference as is proposed.

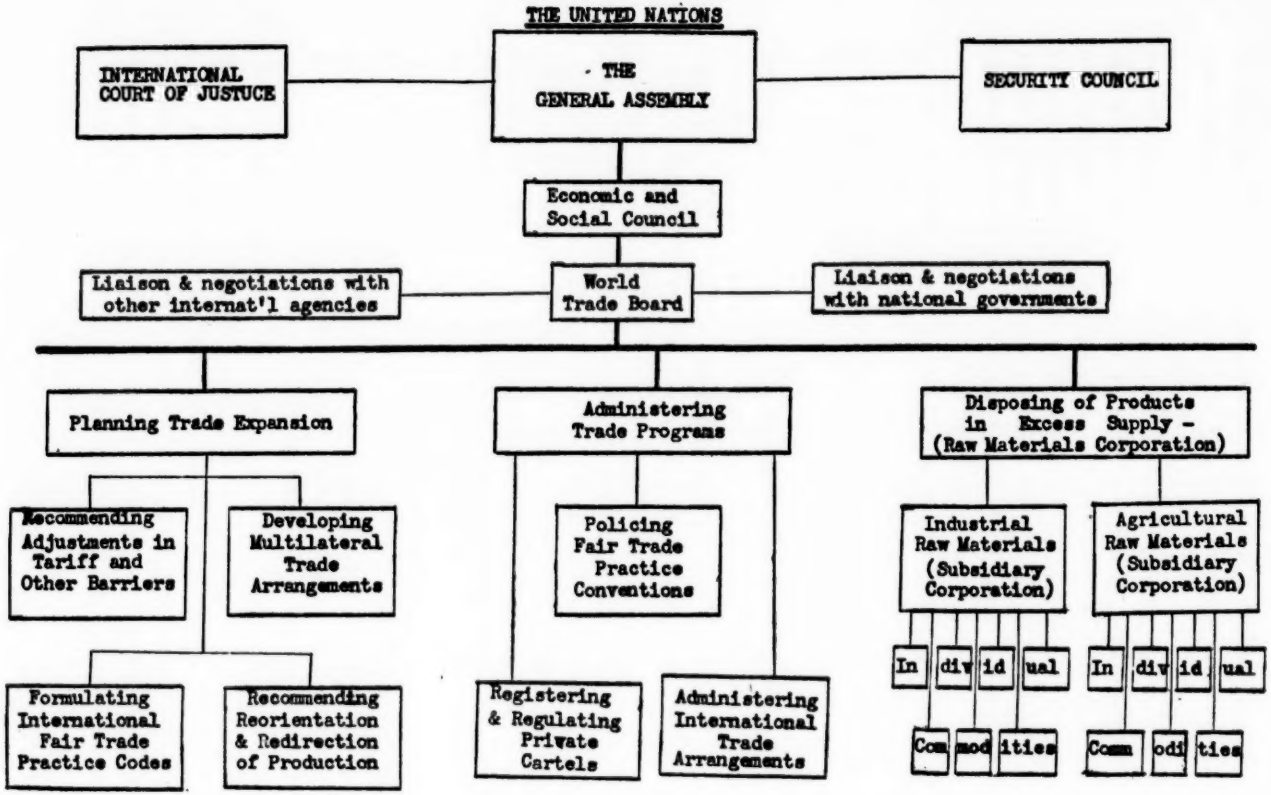
the Board and how it would tie into the Economic and Social Council and with the General Assembly of the United Nations Organization proposed at San Francisco (see chart).

The members of the Board would consist of a selected number of representatives of the participating nations in the United Nations Organization. Possibly the most effective way to select the membership would be on the basis of the relative importance of the different nations in international trade, with a rotating membership provision similar to that proposed for the Supreme Council of the United Nations Organization.

The principal executive officer of the Board would be a Director General with appropriate staff and facilities for efficient operation. Under the Director General would be Deputy-Director Generals in direct charge of the different functions performed by the Board.

Functions of the Board.—The World Trade Board would have three primary functions (1) to explore continuously, ways and means for expanding international trade, (2) to register and regulate private international cartels and administer inter-governmental conventions and trade programs, and (3) to manage and dispose of agricultural and industrial raw materials in excess supply. In performing these three functions the Board, of course, would have to maintain very close relations with the governments of the several nations and with other international bodies such as F.A.O., International Investment Bank, Stabilization Fund, and other agencies still to be set up that have direct interest or pertinence to its operations.

Trade Expansion.—One of the primary functions of the Board would be to search continuously for possibilities of expanding world production and trade—whether by lowering of tariffs and other barriers to trade—by redirection and reorientation of production in the different countries—or by increasing the exchange of products most efficiently produced in one country with those produced in other countries. It would analyze continuously the pattern of trade and the exchange position of the different countries; prepare and keep current international balance sheets; and consider continuously ways and means of bringing the imports and exports of both goods and services of the different countries into balance. It would point the way toward implementing these trade possibilities by formulating international fair trade practice codes or conven-


THE UNITED NATIONS
INTERNATIONAL COURT OF JUSTUCE
THE GENERAL ASSEMBLY
SECURITY COUNCIL
Economic and Social Council
Liaison & negotiations with other internat'l agencies
World Trade Board
Liaison & negotiations with national governments
Planning Trade Expansion
Administering Trade Programs
Disposing of Products in Excess Supply - (Raw Materials Corporation)
Recommending Adjustments in Tariff and Other Barriers
Developing Multilateral Trade Arrangements
Policing Fair Trade Practice Conventions
Industrial Raw Materials (Subsidiary Corporation)
Agricultural Raw Materials (Subsidiary Corporation)
In div id ual
In div id ual
Com mod ities
Comm odi ties
Formulating International Fair Trade Practice Codes
Recommending Reorientation & Redirection of Production
Registering & Regulating Private Cartels
Administering International Trade Arrangements

FUNCTIONAL CHART OF PROPOSED WORLD TRADE BOARD—(SHOWING TIE IN WITH ECONOMIC AND SOCIAL COUNCIL AND GENERAL ASSEMBLY OF UNITED NATIONS ORGANIZATION)

tions; by developing and drafting exploratory multilateral trade arrangements among groups of the member nations for ratification by their respective governments; and by suggesting or developing other lines of action and procedures that would expand and coordinate effectively the production, trade and consumption programs of the cooperating nations.

Trade agreements would cover proposed changes in tariff rates, mport and export quotas, milling restrictions, sanitary conventions, subsidies, and other matters, including exchange controls and rates, affecting the exchange of goods between or among the different countries. They also should include the most-favored-nation clause, so that their benefits could be extended to other like-minded nations not parties to a particular agreement.

After such exploratory trade agreements had been drafted they would be referred to the Director General and through him to the Board itself. Whereupon the Board, under the authority of the Economic and Social Council and the General Assembly, would if it saw fit invite the interested nations to designate official representatives to a trade conference for negotiating an agreement. Obviously, such arrangements might include several nations or only a few. They might be negotiated between nations in a broad general region such as the Western Hemisphere or Western Europe or they might be negotiated between nations in different regions such as between the important raw material and manufacturing nations. A particular agreement might cover a great many items or only a few. Of course, the greater the number of items covered and the greater the number of nations included, the greater would be the effect of the agreement.

Regulation of Cartels and Administration of Trade Programs.—A second function of the Board would be to register and regulate all private international cartels;[4] to police all international fair trade codes or conventions; and to administer all inter-governmental trade arrangements and commodity agreements. In order to make its actions effective, the Board should be clothed with authority by the participating nations to impose appropriate penalties against the goods either of private cartels or of governments moving in international commerce for non-compliance with agreed

[4] A great deal of the discussion in recent months has been strongly in favor of the complete abolition of cartels. Although such action undoubtedly would be desirable in the general interest, it is assumed here cartels will continue and that control will come through some form of regulation.

fair trade practices or with provisions of agreed inter-governmental arrangements.

Obviously, if the Board is to regulate private international cartels effectively, there, first of all, must be a definite understanding and agreement among the nations as to the nature and definition of a cartel. There next must be similar understanding and agreement upon what shall constitute fair trade practices—which cartel practices are to be permitted and which are to be outlawed. There finally must be agreement upon lines of action to be taken, including the type of penalties to be imposed, in case of non-compliance with agreed-upon trade practices. Presumably such penalties would be imposed by the participating governments. In extreme cases, all the participating governments might refuse entrance to their countries of the products of non-complying cartels. The several governments should also agree to regulate the domestic operations of any corporations operating as adjuncts of an international cartel. Coordinate machinery thus would have to be set up in the different countries to make such regulation effective.

Operating under such directives, the Board would require all cartels to register with it; to keep it continuously informed on their operations; to report immediately any change in procedures; and to conform to such rules and requirements as the Board might need to impose in discharging its responsibilities. Failure to comply with these requests or to conform to the fair trade practices agreed upon would cause the Board to call upon the individual governments to invoke the penalties indicated above.

Policing of international conventions relating to governmental trade practices and administering inter-governmental trade agrangements presumably would be much less difficult for the Board. The problem would be largely one of seeing that the different governments conformed to the agreement and advising with the Raw Materials Corporation as to developing surpluses and the need for, and timing of, its operations.

Managing and Disposing of Products in Excess Supply.—A third function of the Board would be the management and disposal of agricultural and industrial raw materials in excess supply. In order to discharge this function in an effective manner the Board would be authorized to set up an International Raw Materials Corporation with authority to enter into agreements or contractual relations with nations, corporations, cooperatives, or private individ-

uals to buy, warehouse, sell or otherwise manage and dispose of such materials that may be in excess supply when the war ends, or that may subsequently accrue, so as to insure their orderly movement into trade and consumption and to prevent them from becoming a burden to international commerce.

Operation of the Raw Materials Corporation.—Perhaps this phase of the Board's activities needs to be explained in somewhat greater detail. The Corporation, of course, would have a board of directors and an executive officer or manager. Inasmuch as it would handle both agricultural and industrial raw materials, it would have two subsidiary corporations, one to handle agricultural and the other industrial raw materials with separate programs developed for the individual commodities.

The central function of the Corporation would be to manage and dispose of products in excess supply. It would not attempt to stabilize or maintain prices at any fixed level, *except on a stop-loss basis.* It, hence, would not come into the market to make purchases and sales until an emergency situation developed. It would operate then to prevent a run-away price situation—to stop a descending price spiral before it reached a disastrously low level. Thus the effort would be to avoid all price stabilization operations except as a final resort to ameliorate hardship caused by extreme depression. The plan of operation for agricultural raw materials would be somewhat as follows:

At the beginning of each year or crop season, the World Trade Board, working through the manager and director of the Corporation and its subsidiaries would determine:

(1) The general range within which prices of the different commodities likely would fluctuate in the event that the Corporation stayed out of the market;

(2) Whether action by the Corporation was needed with respect to any commodity, and if so, the terms and conditions under which the Corporation would be willing to accept the commodity as well as the amount of the commodity which the Corporation would accept;

(3) Ways and means of disposing of excess supplies which would not move in the commercial market, taking into account the stocks that would need to be carried as insurance or as buffer supplies against changes in yields or prospective increases in demand. This would call for consideration of sales of excess supplies at less than

the commercial price for special purposes, such as for improving nutrition, relief feeding, or for developing a new market for the commodity.

This procedure, it will be noted, permits considerable flexibility in operation. By giving free rein to market forces, except under conditions of extreme depression, scope would be left for private trade to operate. The Corporation would not buy or sell until an emergency situation began to develop. When stocks began to pile up the Corporation might take action along one of the following lines: (1) A part or all of the excess supplies might be stored for subsequent disposition, (2) the excess supplies might be disposed of at less than market prices by agreed-upon methods, (3) the excess supplies, in part or whole, might be made available to the low income groups of the various nations for use in improving nutrition or levels of living, or (4) the excess supplies might be used for relief feeding.

Concurrently with these disposal operations, which would seek to clear the market of excess stocks as rapidly and on as favorable terms as conditions would permit, other steps would be taken to encourage the different nations to redirect and reorient production and to take such other action as appeared necessary to forestall the reoccurrence of a similar situation. Here the commodity agreement would play its role. But if such agreements are to be fully effective in bringing about the adjustment in resources that would be required they would need to be geared in with and made a definite part of a wider multilateral and multi-commodity arrangement covering all important goods and services.

The stabilization and disposal operations, of the Corporation, obviously, would involve important problems in financing. Probably the most feasible way to finance such operations would be for the several nations to underwrite a revolving fund—in somewhat the same manner as for the proposed International Monetary Fund, or for the International Bank for Reconstruction and Development agreed to at Bretton Woods. Losses could be met by some agreed-upon formula worked out by the cooperating nations. They might be met, for example, by contributions from the various nations in the same proportion as their share of the fund, or by contributions according to the amount of the losses attributed to the commodities of the particular countries, or by some combination of these or other criteria.

Relation of the World Trade Board to Other International Agencies. —The chart previously referred to indicates how the Board would be an integral part of the over-all United Nations Organization. It also indicates that the Board would have liaison functions to perform. These liaison functions would be particularly important in bringing about an expansion in world trade and in managing the operations of the International Raw Materials Corporation and its subsidiaries.

The Board, obviously, should work very closely with the International Bank for Reconstruction and Development and with F.A.O. in striving to achieve a redirection and reorientation of production in the different countries. It also would need to work very closely with the Stabilization Fund in appraising the effect of changes in trade upon the exchange position of the different countries and in devising ways and means for bringing about a better world balance of supplies available for import and export. It also would need to work very closely with F.A.O. in developing programs for distributing products in excess supply so as to gear them into and make them contribute most to the improvement of nutrition and better living standards in the different countries.

In addition, the Board, of course, would have to work very closely with the governments of the several nations. Since it would be the official international agency for handling trade problems, it necessarily would do a great deal of communicating and negotiating with the governments of the participating nations, particularly in calling trade conferences, in negotiating international fair trade practice codes, multilateral trade arrangements, and commodity agreements, as well as in controlling private international cartels, policing and administering inter-governmental conventions and trade arrangements.

Recapitulation and Conclusions

Expansion of international trade requires cooperative action among the nations. When relieved of fear of aggression, nations will desire to cooperate to this end but the lowering of tariffs and the removal of other restrictions to trade will be a slow process and can best be achieved through a quid pro quo bargaining process rather than by an over-all blanket approach. Since every nation must guard continuously its exchange position (ultimately balancing total imports of goods and services with its exports) trade ar-

rangements involving changes in tariffs, quotas, and the like, need to be negotiated in a framework in which all the related problems of the economy are taken into account. This means that they should be on a multilateral and multi-commodity basis.

The proposed World Trade Board as the implementing agency for achieving an expanding trade would be a cooperative international body. It would come into being through the joint efforts of the United Nations and would be the official international agency for handling trade problems. The Board would have three primary functions: (1) to explore ways and means of expanding international trade, (2) to register and regulate international private cartels and to administer inter-governmental conventions and trade programs, and (3) to manage and dispose of agricultural and industrial raw materials in excess supply.

At the outset the Board would not need to exercise all of these functions simultaneously or with all countries. It could confine its efforts in the beginning, for example, to developing suggestions for expanding trade; or it could center its attention on managing and disposing of commodities in excess supply. This latter function undoubtedly would have high priority in case the Board were ready to begin operations at the time or shortly after the fighting stops In time, however, more or less continuous action in all three fields would be necessary for the Board to become an effective instrument in bringing about a sustained expansion in world tarde.

Obviously, many difficult problems would arise in setting up such a Board, to say nothing of the difficulties it would encounter in actual operation. No pretense is made that all such problems and difficulties have been anticipated nor that quick and ready answers to them can be found. The purpose rather has been to sketch in broad outline a proposed method or approach to expanding international trade in the hope that it may contribute something toward an ultimate solution of the problem.

AGRICULTURAL CREDIT POLICY IN THE UNITED STATES, 1945*

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AGRICULTURAL credit policy and program for this country is again under discussion. Before this article appears in print, Congress and the President may have decided what to do with HR 3321, Congressman Flannagan's bill to consolidate all the Federal agricultural lending agencies under a seven-man board outside the Department of Agriculture. It may also have begun hearings on the new version of the Cooley bill proposing to establish a definite status and program for the Farm Security Administration, and on related proposals having to do with the government lending program as such.[1] The writer has been giving considerable attention to the subjects coming up in these later hearings, partly as a result of having been asked to do so by Mr. Chester Davis while he was War Food Administrator, and partly because of the strong interest in the subject of several members of his Seminar in Agricultural Policy in the Littauer School of Public Administration. It may be that he has been duplicating to some extent the work done on the subject by the Land Grant College Committee on Postwar Agricultural Policy. But that Committee was able to devote only 2½ pages to the subject in its report, and omitted altogether reference to some of its major aspects. Dr. Earl L. Butz's excellent article in the May issue of THIS JOURNAL discusses still other phases of the subject. If this article discusses any of the same topics as does Dr. Butz, it will be only to supplement what he has said, or in a few instances differ with him measurably.

The general student of credit may be startled to find Dr. Butz and the writer both proposing an expansion of the scope of public credit for agriculture, after all the legislation and developments in this field in the last thirty years. The simple fact of the matter is that since the First World War, and especially since the Big Depression, the role of credit in agriculture has developed so rapidly that credit agencies and credit legislation have not kept up with it.

* The writer was assisted by the staff of the Committee on Research in the Social Sciences of Harvard University. This is Publication Number 15 in the publication series of the Seminar on Agricultural Policy in the Littauer School of Public Administration.

[1] Both have now been deferred to the Session of Congress scheduled to convene in October.

There is an even greater lag in the prevailing ideas about the function of credit in agriculture. Dr. Butz's article suggests a program of loans for purchasers who have as little as 10 to 20 percent to pay down on the purchase of farms, something comparable to the FHA insured mortgage loans; loans to part-time farmers; improvement loans; and some revision of present lending methods. This article presents in addition the need for farm-enlargement loans, for woodland-development loans, as well as an extension of the present programs of the production credit associations, of the cooperative banks, and of the Farm Ownership or tenant-purchase branch of the Farm Security Administration.

Servicing with Loans

Dr. Butz raises the point as to whether the term "credit" should be used to designate part of the new uses of loans in agriculture; in fact, as to whether even the term "loans" should be used. However, he offers no suggestion of other terms, and hence the present writer will keep on with the present practice.

Furthermore, serious question can be raised as to whether Dr. Butz's principle of classification is a workable one, and as to whether it does not confuse more than it clarifies. He would limit the term credit to loans that are "self-supporting." His idea is that if a public agency makes a contribution of any kind to a lending program, the term credit is a misnomer.

The most important single development in agricultural credit in the last decade has been the combination of technical help in planning for the use of a loan, and in the use of the loan funds subsequently, with the making of the loan. Little of this was in the picture before 1935. Only a few commercial banks went further along this line than occasionally to suggest that a loan would be acceptable if the program for using it were different. The Federal Farm Loan system based its loans on an appraisal of the farm more than of a production program proposed for it. It is true that a small number of commercial banks scattered widely over the country are now beginning to service loans in this same way, or are giving some part of this service. But our agriculture cannot afford to wait for our commercial banking system to develop these services. As a matter of fact, only if public agencies proceed vigorously with such an undertaking, learning not only how to make and service such loans, but more important, how to plan

successful farm production programs in all the different areas of the country, and in this way furnishing leadership and competition, will the commercial banks rise to the occasion.

The reader will note that the term "supervision" has not been used in the foregoing paragraph. Not only is the term an inaccurate description of technical aid in making farm production plans and in carrying out these plans, but it has misleading connotations. The term *servicing* will be used instead in this article, although it is in danger of being understood to include nothing more than the handling of collections and the like.

Now comes the question: Should this servicing be "self-supporting"? If the banks were to provide it adequately in due time, it would be paid for out of the interest which they collect. But there is a long period ahead when this servicing must be subsidized if it is going to be available to the extent needed. Moreover, there is question as to whether governmental servicing should not always be pushing out to conquer new frontiers, with commercial bank servicing following after as rapidly as the banks learn how to handle it.

No reasonable argument against subsidizing this servicing can be offered. It is the same kind of aid that is given farmers by the agricultural extension service. In fact, it is an unusually effective form of such aid—clearly superior to most forms of extension work —because of the manner in which it ties together a program of action and its financial support. Surely a government which is subsidizing a general program of agricultural research, adult education, farm planning for control of water and wind erosion, and of services to herd improvement associations and the like, can make no good case against helping farmers to plan farm and production programs for the use of credit.

The strongest statement can be made in terms of the AAA payments. If it is good national economy to spend a half billion dollars a year subsidizing attempts to shift production, there can be little doubt about the economy of spending as much as a tenth of this amount in helping to plan better farm production programs and helping with their execution. A million dollars spent on a good use of credit supplemented in this way could easily go farther in reconverting the South than ten times this amount spent on "benefit payments."

To classify as "soft" all those loans which benefit from con-

siderable servicing, and as "hard" those which will get along without it, or will pay for their own servicing, therefore blurs the real question, which is, in each case, *how much and what form of servicing are worthwhile, and how much servicing can government afford to subsidize.*

The Timing

The enlargements and revisions of the agricultural credit program proposed by Dr. Butz, and in this article, are mostly not needed until after the war. In fact, to begin with some of them during the war would be a serious mistake. Those which are affected strongly by changes in the level of land values should proceed carefully until the time after the war when land values have become stabilized in this country. It is safe to make relatively few loans to buy or enlarge farms in the next two years at least, and of course only a few tenant-purchase loans. Present levels of land values may be sustained in the decade following the war, but prospect of this is altogether too uncertain to gamble on. Land values may even rise considerably higher during the next two or three years.

Some of the measures proposed, however, should be ready for use promptly at the end of the war. This requires that the necessary legislation be provided in advance, in time for the agencies to work out their methods and train the necessary personnel. This is especially true of loans for woodland development and to assist in reconversion. Moreover, the status, policies, and programs of what is now called the Farm Security Administration need to be settled as promptly as possible. Consequently, it is highly important that Congress take action within the next six months on the matters discussed in this article.

New Credit Agencies Not Needed

It needs also to be made clear that no new public credit agencies are needed to carry out the measures here presented. All that is required is that the existing agencies be authorized, or instructed, to expand their programs along the lines here indicated. The writer while developing his ideas on this subject has corresponded with twenty agricultural economists in the Land Grant colleges and experiment stations, in some cases over several months. These economists were chosen because of their past interest in credit and

with a view to obtaining a good geographic coverage. Several of these correspondents began their first letter with a statement that the country now has all the public credit "facilities" it needs. Apparently a certain amount of confusion exists over the use of the term facilities. Although no new "agencies" are needed for the kinds of credit here discussed, unless the present agencies use their opportunities, the facilities do not really exist, at least from the standpoint of the farmers. Even an authorization to make a type of loan does not constitute a facility unless the authorization is used. Moreover, an authorization needs sometimes to be backed up by the provision of adequate loan funds before it can become a real facility.

The Functions of Public Credit

Some misunderstanding will be avoided if the writer makes clear at the outset his position with respect to the role of public credit as distinguished from private credit. The most important function of public credit is to develop improved types of loans and methods which private agencies will later adopt. It seems to be in the nature of agricultural credit that competition among private lenders does not bring about the improvements needed, or brings them about too slowly. Governments the world over have found it wise to set up public agricultural credit agencies to lead the way and show how such credit can be better provided. In the process of doing this, they may incidentally furnish some competition for the private agencies, but this is not their primary object. The proportion of the loans to farmers made by public agencies should decline in the near future rather than increase. Private agencies have been lagging in the adjustment of their methods to the rapidly changing conditions of the last three decades. They should be able to catch up on this lag in the next ten or twenty years. Therefore, although filling in gaps in the present provision for credit may in some cases take some business away from private agencies at the start, it should very shortly increase the volume of private lending by its development of new uses for credit. It is significant in this connection that the most successful and forward agricultures in the world depend on credit more than do the distressed and backward agricultures. The farms of Denmark and Sweden, for example, are more than two-thirds financed on borrowed capital.

The second need for public credit in agriculture is to provide

needed capital for groups that can not be supplied it on a strictly banking basis. These groups can frequently be helped much more effectively and cheaply by carefully made and well serviced loans than in any other way, but the servicing may be too detailed, or the losses too large, to be provided out of the usual earnings of commercial banks.

The third use of public credit, and probably its most important use in the past in this country is to bale farmers out when they get into trouble because of severe agricultural depressions, drouths, and other disasters. The need for such rescue work will diminish greatly when adequate credit facilities have been developed, the terms of agricultural loans have been adapted to fit agriculture, and insurance has assumed its full role in farming. In the past, the private banks making loans to farmers have had to be baled out fully as much as the farmers. Doing their part in providing credit facilities that fit agriculture and that stand up in depressions and drouths is their most effective means of keeping government out of the banking business.

Farm Enlargement Loans

The most serious gap in our present agricultural credit system is loans to enable farmers to get enough land to make an economic unit. You may say that farmers who already have farms have no difficulty in borrowing on a mortgage in order to buy additional land. This is true of those who already have sizable farms under small mortgages. But such farmers ordinarily do not need more land very much. The ones who really need it are those who already have mortgages on small farms and are having difficulty carrying even the mortgage which they have because their farms yield such small returns; or they are not mortgaged but their earning power is so low on their present farms that lending agencies do not consider them safe risks. Farmers in either of these situations are in a vicious circle. They are not able to borrow because they have so little resources; and only with great difficulty can they increase their resources without borrowing in order to get command of more resources.

Some way needs to be found of breaking into this vicious circle, and credit can be an instrument to this end. But it must be used as such an instrument with much care. A large fraction of the farmers in these difficult circumstances are too far along in years

to safely reach out and buy more land. Others of them are poor farmers, or at least can be made into successful farmers only with great pains. Others are unthrifty and improvident farmers. But in the midst of all these in an ordinary state are many thousands of relatively young men who need only to be given a chance in order to increase their earning power; and the next five years will bring along as many more thousands. If these can be helped, in twenty years we will have improved the earning power and increased the income of several hundred thousands of our good young men.

It is helpful to consider this problem in terms of the situation in different parts of the country. Strange as it may seem at first, there are many sections of the Midwest where the need for such credit is important. These are sections where the land is relatively poor and the farms are small. The tendency in this Midwest region is for the farms to be considerably smaller on the poorer lands than on the better lands. The situation in the two counties in central Illinois, discussed in the last issue of THIS JOURNAL, illustrate this point well.[2] One of them, Douglas, has rich prairie soils, and the other, Jasper, is dominated by clay hardpan soils. The average size of the farms in Douglas county is around 180 acres; in Jasper, around 120. The average value of products on the Douglas County farms in 1939 was $3,600; in Jasper, $900. The differences between these two counties can not be entirely made up by putting more land in the Jasper County farms, but it can be made up in large part in this way and by converting the agriculture more largely to a hay-and-pasture basis. If a program of lending money to deserving young farmers in Jasper County to enable them to buy more land were developed, and no more than two or three percent of these young men were helped each year, within twenty-five years about all the farms in Jasper County that need it will have been enlarged.

In large sections of the United States, the land is rough and only a small part of it can be cropped. The whole Appalachian and adjacent Piedmont region answers this description. The farms in this territory need to have more land so that they can keep more livestock and have larger incomes. The people living in this territory should not be forced to eke out a meager living trying to grow a few acres of corn and other food crops on steeply sloping fields. Many of these farms should also include sizable woodlands which would furnish employment at slack seasons of the year and

[2] John D. Black, Notes on "Poor Land" and "Submarginal Land," p. 345.

furnish an additional source of income. This country is going to need timber badly in the next hundred years, and this is one of the best ways in which it can be provided.

The dairy farming regions of the Northeast and the Lake States also have many sections in which the farms should have more land so that more cows can be kept. Timber growing can be combined with dairying to excellent advantage in many parts of this region.

The South, of course, has more undersized farms than any other region. On its more level lands, the farms need to be enlarged so that they can grow their cotton with more machine labor and less hand labor and thus grow more of it. In the piedmont and hill sections of the South, the farms need to be enlarged so as to take in land that can be used for pasture and to grow feed for livestock, and many cases to combine timber growing with diversified farming. Much of the South is natural pine region where trees grow very rapidly and woodlands can provide important additional income.

The Federal Land Banks are now able to make loans for the enlargement of farms whenever the present farmer is in a position to carry an additional mortgage. However, 50 percent of the value of the land now in the farm, plus 20 percent of the value of the buildings, does not permit very much of a mortgage, and many of these farms are mortgaged already. Raising the loan limit to 65 percent, as provided in H.R. 2113, helps considerably, but it often does not help enough. Combining a first mortgage loan from a federal land bank with a Land Bank Commissioner loan, making possible a loan up to 75 percent of the normal appraised value of the farm, will help out still more if this arrangement is continued beyond the present one year limit. The Farm Credit Administration therefore has facilities for doing a great deal along these lines, *if it will make full use of its opportunities.* Perhaps it would do this if Congress in revising the existing legislation were to make a special point of designating this type of loan as one to be financed.

The young farmers who can not qualify for a FCA loan on the terms outlined can obtain loans under the Bankhead-Jones Act as that act is now being interpreted. However, any of its loanable funds which are so used reduce by so much the amount available to enable tenants to purchase whole farms. It would be well if the language of the Barkhead-Jones Act were rephrased so as to make it very clear that loans of this type are to be financed as well as tenant purchase loans, and an appropriation were made to cover these loans which is an addition to that for tenant purchase.

Following are excerpts from letters from several agricultural economists in agricultural colleges which deal specifically with this type of loan.

"Present arrangements are not designed to assist those who could use a larger farm to greatest advantage. It is comparatively easy for those who are already established on efficient-sized units to buy more land. It is also possible under the present Tenant-Purchase Program for a limited number of tenants to obtain favorable credit arrangements for the purchase of a farm. But the individual now fighting a losing battle against foreclosure on a small inefficient unit is in a hopeless position. He cannot obtain credit to correct the defect in his operating unit. Neither is he eligible for a Tenant-Purchase contract. He must continue to stew in the juice of his own mistakes or go through the benumbing process of failure and loss in tenure status before he can be given assistance. In other words, he must become a pauper before he s eligible for assistance. We believe that the Tenant-Purchase Program should be modified and expanded to assist the more worthy of such operators in obtaining the additional land or other resources necessary to efficient operation."

"There will be, and now is, a distinct need for the enlargement of family-size farms in this state. The low per-capita income in our state is in no small measure due to the operation of farms with out-of-date equipment and the following of old out-moded cultural practices. Present lending facilities are not adequate to meet the needs for this kind of adjustment. The old established credit agencies are prone to lend money on cotton production, but are extremely reluctant to extend credit for the development of dairying, livestock operations, and other types of farming because of their inability to appraise the risk involved. Some kind of a lending agency should be established that would not only provide credit, but would also provide supervision in the enlargement and adjustment of the small uneconomic farms. I think that it would be sound policy to expand the Tenant-Purchase program to include loans for the purpose of enlarging present small farms."

"I see no good theoretical reason for withholding aid in land purchase to the mortgaged owner of an inefficient small farm (inefficient because small) to make it an efficient unit, when such help is being given a tenant to enable him to purchase an entire efficient-sized farm. The owner may indeed be in greater need than the tenant."

"There is a real need in our state for the enlargement of family-size farms mainly because of increased efficiency resulting from rapidly increasing mechanization and partly from shifting to more general or extensive systems of farming following the decline of cotton production."

"One of the major problems in our state is the small size of the farm unit. A program to increase the size of the farm units would have a much wider application than the strictly tenant-purchase program as now set up. The trend is for the farmers with rather large units to increase the size of their farms and for the number of small farm operators to increase. There is ample credit available for farmers to purchase additional lands who own considerable equity in their farm business."

"It is really very difficult for capable young people without large capital to become established on good farms. Because there is little opportunity to rent a going commercial farm, the young people tend to purchase a cheap submarginal farm. They are then handicapped in their productive capacity and cannot acquire the capital needed for adequate production."

Not all of the economists, you may be sure, wrote in the same vein as the above. The points of view of the doubters can be summarized as follows:

1. The small farmers who cannot borrow to buy more land are poor managers and will not be helped by getting them more in debt. The farmer with management capacity larger than his farm can usually borrow at the bank; the bank will have discovered his latent abilities.

2. It is better to have smaller debt-free farms than larger farms with more debt, so long as we have no assurance that a depression will not develop. It is not a good move for small farmers without present access to credit to go out and buy more land.

3. Farmers are buying additional land at a rapid rate now. No more credit is needed.

Improvement Loans

Objection was raised to loans to enlarge farms also by some who pointed out that this will reduce the number of farms, and who said that in their territory many of the farms were too large already. Needless to state, this point of view comes out of sections of the country where many farms could be cut in two and still the farm

families would have incomes twice those obtained from Tennessee southward; and where the "economic unit" is being interpreted by some of the professors of farm managment to be a farm that employs at least one hired man in addition to the average amount of family labor.

Farms can, in effect, be enlarged without closing out other farms, merely by improving the land now in the farms. The productivity of many farms in this country could be increased a fourth or more by one or more of the following methods: draining wet portions of the farms, developing small-scale pump and other irrigation, pasture and range improvement, land clearing, terracing and other forms of erosion control, construction of needed farm buildings, and lastly, and probably most important of all, taking the country as a whole, woodland improvement. These are often excellent alternatives to buying more land.

Surely, you may say, no new credit facilities are needed for loans for such purposes. What better credit instrument could serve such a need than a real estate mortgage? Dr. Butz answers the last question very well. "At present nearly all types of lenders are hesitant to reopen a mortgage and extend additional credit for such obviously desirable improvements as drainage, liming, new buildings, fencing, and the like." Hence only complete refinancing of the mortgage is possible, and this is "costly and troublesome." Dr. Butz therefore makes two proposals, namely, that arrangements be developed that will allow qualified borrowers to receive additional advances from the mortgagees, and that improvements of this sort be accepted in lieu of amortization payments. The way to get these procedures into general use will be for Congress to amend the Farm Credit Act to authorize these arrangements, and for the banks and insurance companies to adopt them as soon afterward as they will.

Even with this flexibility added, the agencies now granting mortgage credit would not take care of possibly a million of farms needing improvements but which are too small or too heavily encumbered to furnish a basis for a bankable loan. By no means, of course, are all of the farmers on these possible million farms the sort who can really be helped by an improvement loan. However, a few hundred thousand of them could use such a loan to advantage in the first few years after the war, and more later. Such loans should be made only on the basis of carefully worked out farm

plans. Only a few country banks are now helping farmers make such plans. Most of the loans made for such purposes to this group of farmers in the last eight years have been made by the Farm Security Administration as five-year "standard rehabilitation loans." They have not been well enough selected or serviced, partly because those making the farm plan and the loans have not been adequately trained for it.

The improvement loans financed by real estate mortgages and those financed by the Farm Security Administration have also differed somewhat in size and purpose. The FSA loans are more nearly of the "intermediate credit" type, and will be discussed under that head later.

Credit for Improvement of Small Woodlands

Neither the usual type of real estate mortgage nor the FSA standard loan meets the needs for most woodland improvement because of the long period that must elapse before the timber harvest furnishes an income out of which to repay the loans. A further circumstance is that in many situations, such improvements will not return enough to warrant private investment at ordinary rates of interest. The public, however, has a great stake in having these woodlands improved, first because of the prospect of an inadequate timber supply for the nation over the next fifty to one hundred years; second, because of the contribution of woodlands to keeping up the supply of ground-water and feeding the streams; and third, because of the need for control of the siltation of rivers and of dams, and checking erosion generally.

Farm woodlands comprise about twenty percent of the total forest lands of this country. Most of these woodlands are now given very little care and are not very productive. Improved practices in management of farm woodlands, including improvement cuttings, thinning, pruning, reduction of fire hazards and diseases, new plantings, and other approved practices, will in time make these woodlands highly productive.

If these improvements are to be made, however, many of the small forest owners will need technical advice on woodland manageagement. The federal government should take steps to provide this technical advice and guidance in areas where forest lands are important. Then it should provide special types of loans suited to this type of investment. They should be available to farm woodland

owners, and probably to owners of other tracts of forest lands not exceeding perhaps 640 acres. The owner should be required to agree to a program of forestry practices which he has worked out in cooperation with a competent forester. Cash should be advanced on these loans under installments arranged in advance. The owner will in a majority of cases do most of his own work. Farmers commonly have labor available to do this work. In the past, however, since woodland improvements do not ordinarily yield any income until after a long period of years, small farmers owning forest land have commonly sought employment outside the farm. They needed current income for a living. The amount of the installment advanced can be determined on the basis of the number of days of labor allowed in the agreement for each improvement operation, times the agreed-upon wage rate.

Loans for such woodland improvement obviously need to be long-term loans. However, they should have sufficient flexibility to allow the period of the loan to be adapted to the circumstances of each particular case. Repayments on the loan should be based upon the income from the woodland over a period of years not to exceed 30 years after the tract begins to yield a regular income. Since selective cutting and sustained yields are contemplated under the plan, the repayments should extend ordinarily over a period of years. When an owner has a good stand of timber which requires only small expenditures, and it is near a stage when cutting can begin, the loan can be of comparatively early maturity, perhaps 5 to 10 years. On the other hand, development of timber on badly depleted forest land requiring planting would necessitate loans for a term of 30 to 50 years or perhaps even longer. Security for the land should be a first mortgage in the land including the timber. The maximum total loan should not exceed an amount which can reasonably be expected to be repaid out of 50 per cent of the gross income from the woodland over a period not to exceed 30 years.

Loans for forest improvement and development involve many hazards which make the risk comparatively great. These hazards include possible damage by fire, pests and diseases—many of which are beyond the control of the borrower. These high risks, and the long period of the loans, mean that credit for forestry improvement is not likely to appeal to private investors or institutions, and therefore if it is to be made available must be provided by the government. Furthermore, since earnings from the forests are uncer-

tain, the owners will demand low rates of interest if they are to use credit as a means of improving forest lands. Loans, in other words, must be provided at low subsidized rates of interest. Such subsidy can be justified by the public benefits which will accrue from the improvement and development of our forests. A rate as low as one or two percent may be necessary if widespread use is to be expected of credit for rehabilitation of the forests of small owners.

Consideration might well be given in this connection to establishing the Federal Farm Mortgage Corporation as a permanent agency and expanding its authority to include the making of long-term loans for the improvement of small forest tracts at low rates of interest. If this were done, close collaboration between the Federal Farm Mortgage Corporation and the United States Forest Service should be required. Also consideration should be given to broadening the authority of the Secretary of Agriculture under the Bankhead-Jones Farm Tenant Act to include farm development loans which in turn would provide credit for the development and improvement of forest tracts which are parts of farms.

Farm Buildings

Space can be taken only to mention the difficult problem of financing the farm building program which this country will face after the war. This program must include both dwellings and farm buildings. With respect to the former, a decision needs to be made as to whether the credit will be provided through an over-all national housing agency, or as a form of agricultural credit. Arguments can be advanced for both, but the case against trying to set up two types of real estate loans, made by two separate agencies, to be repaid out of a common source of income, the farm business, seems overwhelming. If such credit is to be handled as farm real estate credit, however, the public administrators of such credit will need to do some revolutionary thinking and planning.

A principal reason for the present state of the buildings on farms is that farm incomes were not generally sufficient from 1920 to 1941 to repay the higher cost of building construction after the last war caused by the doubling of wages of construction labor and sharp increase in prices of building materials. Surveys of factors determining the value of farms made around 1920–22 commonly showed a dollar's worth of farm buildings, appraised in the usual manner, adding more than a dollar to the value of the farm. Since

1930, similar surveys have shown the opposite. An investment in new farm buildings in 1935–39 in most cases added considerably less to the value of the farm than the cost of the buildings. Eventually the prices of farm products will need to be high enough to cover the cost of at least a minimum set of farm buildings. Whether or not such a level of prices prevails in the next ten years is the crucial factor in farm buildings credit. If such a level does not prevail, farm housing will need to be subsidized by low interest rates and perhaps in other ways, or it will continue to be disgracefully inadequate.

Credit for part-time farming is very well analyzed in Dr. Butz's article. The housing part of it, he points out, is only technically covered by the FHA provision for insured residential loans, and the agricultural operations on these farms are too small to appeal to lending agencies. It may be added that a good part of the 47 acres in the average part-time farm in 1930 was woodland, and that if the woodland in the belts of part-time farms around eastern cities is not improved these belts will continue to be shabby run-down areas.

Farm Ownership Loans

Concerning the Farm Ownership program, formerly called Tenant-Purchase, only a few points need be made. First, all expansion of it, except for veterans, should be held in abeyance till the level of land values after the war can be more safely judged.

Secondly, some further special provision should be made for farm ownership loans to veterans, in the form of a sufficiency of loan funds, and special provision for partly disabled veterans on pensions. Also some arrangement must be devised to save the veteran from obligating himself to repay a mortgage on a farm purchased at inflated values. Assistance in renting a farm with option to buy later when land values have become stabilized, would seem to be the most rational procedure. If Congress will not favor this, it should provide for a reappraisal of the farms ten years after purchase and reducing the mortgage proportionately if land values have declined.[3]

Third, loans under the Bankhead-Jones Act to enlarge farms, and to make certain types of improvements on them subsequent to first purchase, with increased appropriations to cover these, would

[3] Black, John D., Postwar Land Settlement, *Quart. Jour. of Economics*, Nov. 1944.

make the Farm Ownership program of considerably more service to agriculture.

Fourth, the agricultural economists in the twenty states nearly all consider that too many loans had been made in their states on farms that are smaller than "economic units," and the principal reason which they give for this is the amendment to the Bankhead-Jones Farm Tenant Act which limits the amount paid for a farm to the average price of farms of 30 acres or over in the county or other unit. In order to operate at all in counties where the bulk of the farms are smaller than economic units, the FSA has had to make loans on undersize farms. A very simple revision of the amendment will meet this situation.[4]

"Standard" FSA Loans

The "standard" five-year loan called a rehabilitation loan, now made by the FSA to a farm family with a low income for the purpose of increasing its earning power, is a social invention of high significance, likely to be widely adopted over the world. No doubt it had antecedent parallels in the experience of some other peoples, but if so, they are not clearly visible. It began to take its present form when some of the outright grants made by the emergency relief agencies to farm families in 1933–35 were converted into loans because the recipients of them expected to get on their feet again presently and did not want charity. In time, the grants and loans were clearly differentiated, and the loans put on a definite schedule of advances and repayments, based upon a definite farm and home program. Many of the loans made in the early years were not based on plans that offered a reasonable chance of paying of the loan. Either the plans did not represent good farm and home management, or too much was expected of planning in itself. The administrators were finding their way by trial and error. The standard loan of today is conceived as an advance of capital, normally for a period of five years, to enable a farm family to carry out a program that is expected to put it in a position to carry on for itself thereafter, on a higher level of productivity and income than before, accompanied by technical aid in laying out and prosecuting the program. The amount of technial aid on the one hand is greater than

[4] The last appropriation permits 15 percent in excess of this, but includes new buildings and improvements and repairs, not included heretofore. The restriction is therefore tighter than before.

can be paid for out of the usual interest payments, and at the best there would be more failures than commercial banks can afford. A small net cost to government is therefore involved, but the outlay is small compared with that of prevailing government-aid programs. Although loans are made for five years, they should be extendable in some cases—five years is a short period in which to achieve the large gains expected in the case of some families. Although, in general, families should not be given such loans unless five years will do the job, more time should be allowed some families, especially when the program planned proves not to have been made right. The advances at the start can properly be of two kinds, those to buy equipment and livestock needed, and annual operating advances of the sort that many farmers regularly obtain from banks, or in the South, from landlords. The second type will need to be renewed from year to year, until no longer needed, or obtainable at local banks or from Production Credit Associations.

The writer has refrained from applying the term "rehabilitation" to these loans, except to identify them, because most of the families receiving them *cannot be rehabilitated because they never were habilitated.* He proposes, therefore, that they be called *habilitation* loans. It is true that in the period when this type of loan was evolving, a considerable fraction of the families aided were in difficulties mainly because of the depression or because of droughts in the West. And no doubt there will be families needing help for similar reasons again. But the preponderance of cases will be of the habilitation type until such time as most of the families of this description have been reached by this means, or by farm enlargement loans, or by improvement loans of the several types described above.

The two needs of the habilitation loan program at present, in addition to giving it a clear status, and a continuance of the sound constructive over-all administration it has had recently, are better trained personnel to help with laying out the farm and home programs, and decentralization of the administration by giving local committees a large measure of responsibility for selecting the families, approving the farm and home programs, approving the annual advances, and deciding upon extensions of the loans. These local committees should be given much latitude in decisions on these points.

Sub-standard Farm Families

What about farm families with too low productivity to be in-

cluded in the standard loan programs? The FSA has sorted out a few hundred thousand of these from its lists, quit making them loans, classifying them as "collection only" cases—as many as a thousand of these in a few counties. The writer agrees with Dr. Butz that the problems of these families mainly need other kinds of treatment than habilitation loans, but he does not say that such loans cannot be used to advantage with some of these families, *along with other measures.* They should not, however, be handled by the kinds of agricultural credit institutions which we have been considering. Instead, the states need to enlarge their public welfare services to include help for these farm families and to equip their public welfare agencies with personnel competent to assist such families in planning what farming they do, and in budgeting the living expenses, as well as with the medical problems frequently involved. In those cases in which loans to buy equipment or livestock or annual advances and the like are indicated, the device of the joint bank account can be very useful. Public welfare work with farm families conducted in this way can accomplish much more for them than public welfare work commonly does for city families.

Farm Real Estate Credit

Two questions relating to ordinary farm mortgage credit need to be considered before concluding this article. One is the extent of the servicing which the FCA and its loan associations can advantageously give its borrowers. The answer given here is that a farm production plan should be required along with the application for the loan, and the applicant should have some technical assistance in working out this plan.

The second question is the use of variable-payment provisions. It is true, as Dr. Butz states, that borrowers like variable payments better in years of low income than of high income, and that many of them prefer a fixed schedule of payments. But this does not mean that the FCA should not push vigorously toward a general use of such payments. The proposals here suggested are: (1) Devise a genuine variable-payment schedule, in place of the makeshift one now made necessary by the language of the Farm Credit Act. (2) Make this optional with all borrowers in which the mortgage does not exceed the limit of 50 percent of the appraised value of the land plus 20 percent of the value of the improvements. (3) *Require* the variable-payment plan with all loans in excess of this limit. (4)

Develop a scheme by which payments made during the war in excess of the fixed schedule can be used as offsets to deficiencies that may occur in future depressions or disasters. (5) Amend existing statutes to authorize these proposals.

Ordinarily, mortgages to enable farmers to buy farms should be made on an amortization basis and include variable-payment provisions. It should not be necessary from any point of view for farmers to commit themselves to a contract calling for payments which they cannot make in years of crop failure or agricultural depression. On the other hand, it is desirable that they make larger payments than usual in years of very good income like those since 1941. Neither should farmers commit themselves to paying off a mortgage at a more rapid rate than can ordinarily be expected after allowing a reasonable margin of safety. They should, however, be permitted to pay off their mortgages as fast as they are able. One can understand why a private individual loaning money on a mortgage may not want to have his payments coming to him in this variable fashion. But no commercial or public credit agency can offer a really substantial argument against it. The public lending agencies need to take the lead in this development.

The changes suggested need to be made soon. We must be prepared for a possible break in farm incomes and land values anywhere from three to ten years after the war. If the mortgages written during the next two years are set up on a variable-payment basis, the farmers will make some good payments during the next few years and then be able to carry on during the depression years that may follow.

Intermediate Credit

Equally important is it that loans of the intermediate type, for a term of one to three years ordinarily, for the purpose of buying cattle and farm machinery and making minor building and land improvements and the like, be put on a sound basis before the next depression. Most of the intermediate term loans now being made are made as short-term loans with expectation of renewal, or as real estate mortgages. By the end of 1920 after the last war, the banks of the country had $3,900,000,000 of short-term loans outstanding against agriculture as contrasted with $1,600,000,000 in 1914. Over half of this increase was written in the last two of these years. Part of it was in the form of loans to grow annual crops, but

an almost equal fraction of it was for investment in working capital and buildings of the sort named. When the crash in farm prices and land values came in July 1920, the banks tried to call these loans, or refused to renew them. This, on the one hand, forced large numbers of farmers to sell their working capital in order to pay off their debts, and on the other, caused thousands of banks to fail because of holding frozen assets. Out of 177 banks which failed in the state of Minnesota between 1920 and 1926, the bank examiner gave frozen assets or some similar explanation for the failure of 148 of them. Much of this debt was presently refinanced by adding it to mortgages. The volume of farm mortgage debt in the United States rose from 8 billion to nearly 11 billion dollars between 1920 and 1923, in spite of sharply declining land values.

We could have a similar situation some time after this war. Agriculture is in an unusually solvent position right now, and farmers have large reserves of cash or bonds. But most of the difficulties after the last war were caused by developments in the two years after the war ended. We are by no means safe against a repetition of a considerable part of what happened in 1918–20.

This country was very keenly aware of this shortcoming in agricultural credit in the early 1920's. A committee of Congress held hearings all over the country on the McFadden Bill and other proposals intended to provide this kind of credit. In 1923 Congress passed the Federal Intermediate Credit Act which provided for the establishment of 12 Federal Intermediate Credit Banks, which were authorized to discount paper for agricultural credit corporations and other types of private lending agency. But not very many such corporations were established. The Northwest had more than any other region, but only around a hundred were set up in the St. Paul bank district. In spite of their disastrous experience in the early 1920's the farmers kept on making working capital loans as if they were loans for annual operating expenses. They ran into another jam in 1930–31, but this time the intermediate loans played a smaller part in the catastrophe than the real estate mortgages based on receding land values.

The production credit associations provided for in 1933 were expected to provide loans of this sort. Except in two or three of the districts, they are being made on a very limited basis. The associations instead are making such loans on a short-term basis the same as the commercial banks, the farmer committing himself to

pay in one year what he cannot expect to pay in less than two or three. Of course, renewal of the loans is possible, and the farmer has a right to assume that the Farm Credit Administration will not have to close down because of frozen assets, as private banks may have to do if they have made too many loans of this sort in the two or three years before the next big depression. But even though this is a reasonable assumption, the farmer should not be required to commit himself to an unreasonable program of repayments. Congress would therefore do well, in its revision of present provisions for agricultural credit, definitely to instruct the Farm Credit Administration to make bona fide intermediate-term loans.

As things have worked out, the agency which has really developed intermediate-term credit for farmers is the Farm Security Administration. Most of its standard rehabilitation loans provide intermediate credit to buy livestock and other working capital, to be repaid within a period of five years according to a schedule of annual payments that is carefully defined. These loans, however, are supposed to be made only to "low-income" farmers and most of them are for less than $1,000. The Farm Security Administration is not supposed to make loans to farmers who have larger resources and who can borrow at commercial banks. In consequence, these farmers, if they borrow at all, go to the commercial banks and make such loans as if they were annual operating loans and take a chance on their being renewed in case adversity strikes.

The commercial banks have risen to this opportunity very encouragingly in the last five years. Probably a few hundred of them are now making intermediate-term loans under a system of payments running over two or three years. One of the reasons for this is that the banks are now looking hard for opportunities to loan money, and they have begun to encourage their farmer patrons to invest in working capital and real estate improvements. But it is not safe to count on this development to meet the needs of the situation as it is likely to arise within the next five years.

Cooperative Credit

Finally, a word or two about cooperative credit. Here again it is important to emphasize that no new agencies of any kind are required to provide the credit that cooperatives will need. However, the facilities of the Farm Credit Administration have not in the past covered the field adequately. Principally, they have not pro-

vided the necessary services and financing for cooperative buying of farm machinery, purebred sires, and the like. Either the Farm Credit Administration must branch out in this field or else the Farm Security Administration must render this service. The legislation on this subject should be specific.

There is also question as to whether cooperative loans should not be for a considerably larger fraction of the investment in farm machinery and the like than is now possible under the rules under which the cooperative banks make loans to cooperatives. If individual farmers are able to obtain loans at banks for a large part or all of the cost of farm machinery, why should not farmers buying collectively be able to do the same thing?

Credit can also be used to advantage in helping to try out and develop new forms of cooperative enterprise. An example of this is credit to establish woodland cooperatives. The small woodland owners may not be able to advance the capital necessary to set up a cooperative enterprise in this field. It might be worth while therefore to make available a small revolving fund to be used by the cooperative branch of the Farm Credit Administration in setting up "pilot" cooperatives, these to be financed in the regular way as soon as they establish their ability to stand on their own feet.

Organization for the Servicing of Loans

A major problem still to be solved is the organization and setup for servicing, in the manner outlined above, the several types of loans that have been analyzed. It is here dealt with summarily by the submission of a definite proposal. This is that there be created in each county an agricultural credit committee of five or seven members that will undertake to *secure the best possible use of credit in its county*. This committee will have the services of persons competent to make farm production and improvement plans, home plans if needed, woodland development plans, drainage and irrigation plans, building plans, and the like, that are to be offered as a basis for loans, these persons to be on the payrolls of the agricultural extension services, but specifically assigned to do this work. These same persons will visit the borrowers when needed and offer suggestions as to the carrying out of these plans. In a majority of cases, these persons will devote their full time to this work. The committee will review the plans which they bring in, suggest revisions if needed, and *decide what agency can handle each loan to best*

advantage, choosing between the private lending agencies operating in this county, the farm loan associations, the production credit associations, FSA farm-ownership, FSA standard loan, emergency crop and feed loan, water facilities, etc.

The general policies which the committees will follow will be determined by the consolidated national central governing body. One of these policies will be to let a private agency handle a loan if it wishes to do so *under the loan terms which the committee specifies.*

This committee will absorb the committees now helping write farm-ownership loans and standard loans. It will be the local committee described above as needed to handle standard loans properly. Its membership should include several farm operators, who in the main are members, but not officers, of farm organizations, one person with considerable banking experience, preferably not a banker at present, and other highly regarded citizens of the county not now holding public office. It may create sub-committees to help it in distant parts of the counties. Its ex-officio secretary will be the county agent, or preferably an assistant county agent employed for this purpose.

The agricultural extension service will be responsible for the technical competence of the plans prepared, and of the guidance furnished in carrying them out, but not for any recommendations concerning the granting or handling of loans. The committee will not be responsible in any way for the security of the loans accepted by any lending agency, but will keep fully informed as to the repayments on all the loans it has recommended.

It is assumed that the state extension service will need financial assistance in furnishing these technical services to the committees. Most of the timbered counties will need a full-time forester working on farm woodland plans. The expenses of the committees as such will be shared between the agencies served by them, including even the private agencies on some equitable basis.

The actual details of operation of such an organization could be hammered out in conferences, tried out in the counties, and revised as need be until a reasonable degree of smoothness, regularity and harmony is attained.

Credit for Postwar Reconversion

The readjustments which are going to be called for in the agriculture of this country at the end of the war and in the next ten

years, on the one hand, place a special burden upon the credit agencies serving agriculture, and on the other, afford them an opportunity for unusual service. If they are adequately staffed and supplied with the loan funds needed for it, they can play a very large role in promoting the desired types of readjustments. In many situations, credit and subsidies are alternatives. Given credit and assistance in planning the use of credit, a large fraction of the reconversions that are going to be called for in the next decade can be brought about without any direct subsidies or financial inducements to farmers to make them. Technical aids in planning readjustments combined with credit make a very effective combination.

THE AGRICULTURAL ECONOMICS PROGRAM OF CHINA

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THIS paper[1] is a brief description of the principal lines of work now being carried out in the Department of Rural Economy, the Ministry of Agriculture and Forestry, Chungking, China. The scope of work assigned by the National Legislative body to the Department of Rural Economy, the Ministry of Agriculture and Forestry, is rather broad. It includes: (1) the reform of land tenure, (2) the planning and supervision of agricultural credit, (3) the improvement of farm management, (4) survey and research in rural economy, and (5) other rural welfare affairs. These provisions indicate that the nature of work of the Department is both administrative and research, both action and fact-finding.

In recent years, however, we have paid more attention to the third and fourth categories of work as listed above; that is, the improvement of farm management and the survey and research in rural economy. We believe that unless the organization and the operation of the farm are materially improved, the welfare of the farmer can hardly be promoted, and that before we can formulate any definite policy and put it into effect, we have to find out facts. In the following, therefore, I shall say a few more words about farm management and agricultural survey and research although other phases of work will also be touched upon.

I. *Reform of Land Tenure.* The purpose of the reform of land tenure is twofold. The first is to protect the tenant farmers and to raise their economic standing. The second is to help and to build up owner farmers so as to attain eventually the objective that those who cultivate the land are also owners of the land and to wipe out the boundary now existing between the landlords and the tenants. The methods of approach in this connection may be described briefly as follows:

(A) Protecting the tenant—In accordance with the Land Law adopted more than ten years ago, the Ministry of Agriculture and Forestry has instructed the various provinces to reduce land rent, specifying that the rent should not exceed 37.5 percent of the total

[1] Remarks to the seminar in Advanced Agricultural Economics, University of Wisconsin, February 28, 1945. Mr. Pao-chuan Chao is the Director of the Department of Rural Economy, in the Chinese Ministry of Agriculture and Forestry.

value of the principal product of the land. At the same time, the landlords are prohibited from changing the tenant without sufficient reason and from collecting rent deposit. This measure is being enforced in different parts of the country by first making surveys and by publicity, then conducting experiments and demonstrations, and finally putting the findings into effect. As conditions vary in different provinces, modifications have to be made in order to fulfill local requirements.

(B) Helping and building up the owner farmer—This is jointly sponsored by the Ministry of Agriculture and Forestry and the Land Administration and is being carried out by resorting to administrative, technical and financial efforts. Several districts have been selected for experimentation. The land in the district owned by the landlord is transferred to the tenant or to those who have not enough acreage for profitable cultivation. At the same time, scattered patches of each farm are consolidated. In case the farmers are financially unable to buy the farm, they can secure long-term credit from the Farmer's Bank of China, usually through the recommendation of the agricultural field workers.

II. *Planning and Supervision of Agricultural Credit.* While the actual operation of agricultural credit is largely handled by the Farmers' Bank of China, the Ministry of Agriculture and Forestry has the authority or obligation to plan and to supervise the operation. For the sake of coordination and cooperation different devices have been used: (1) the exchange of information and materials whenever available; (2) to plan together before the beginning of each fiscal year; (3) to hold monthly meetings for discussion; (4) to make joint investigations if necessary in different localities.

Besides, the Ministry is kept informed by its field workers of the farmers' needs for and their attitude toward agricultural credit, so that necessary adjustments may be made from time to time.

III. *Improvement of Farm Management.* Through forty centuries of farming practices, Chinese farmers have gained a great deal of experience and have developed certain kinds of technique in farming which are acknowledged as excellent by the whole world. Among them, the maintenance of soil fertility, the check on soil erosion and the establishment of the irrigation system are frequently mentioned. But the fact that there have been some achievements in the past does not mean there is no room for further improvement in the future. On the contrary, the introduction of

more scientific methods of cultivation, improved varieties of crop seeds and breeding stocks, more efficient use of productive elements and better combination of enterprises will help Chinese farmers increase their production and thus their income. The farm management project carried on by the Ministry is endeavoring to attain this goal.

With an average size of about four acres of cultivated land, the Chinese farm cannot be operated efficiently. The future development of industry and commerce may absorb a portion of farm population and thus may help farmers enlarge the size of operating unit, but it will be a slow process. At present, the conscription of military forces has caused a shortage of farm labor. Therefore, it seems to be the proper time now to organize the cooperative farm so that constituent members will be able to use jointly some kind of labor-saving machinery on the one hand and to exchange work among members on the other. Beginning from 1941, ten cooperative farms have been organized in four localities. Each farm has about 100 participating farmers. Its work includes production, processing, purchasing and marketing. From the experience of more than three years we have found that the work is much more effective in regions where special agricultural products are produced. For instance, in the cotton region in Szechwan, a cooperative farm was organized by 105 farmers with the help of the field worker sent by the Ministry. Labor-saving farm implements were gradually introduced. An improved cultivator operated by one man accomplished as much work as could be done by six men with ordinary tools. Efficiency of a man with an improved seeder is about five times higher than that of the one with a primitive seeder. Formerly, these farmers sold their cotton to the local dealers without ginning. They got relatively low prices. The labor being saved now and the cooperative operating facilities make it possible for them to gin the cotton themselves and to ship it cooperatively a longer distance for better prices. The farmers in the vicinity were so impressed that six more cooperative farms have been organized.

In advising farmers to improve their farm management individually, the Ministry of Agriculture and Forestry chose 19 counties as experiment and demonstration areas in 1941. Unfortunately the operation of the War has reduced the number to four counties. Within each of the selected counties, farm management associations have been organized, the individual farm or-

ganization and operation have been analyzed, strong and weak points have been found out, and possible improvements have been made. It is interesting to note that farmers of the association are also gradually using cooperative methods in daily operations.

In the areas where either cooperative farms or farm management associations have been organized, agricultural commodity prices are surveyed, agricultural loans are extended, better seeds, stocks and methods of culture are introduced, and improvements in farmers' homes are made.

IV. *Survey and Research in Rural Economics.* Under this heading, the following phases may be cited:

1. Crop report. Crop report is considered as a type of agricultural survey in the broad sense. It was started in 1934 by the National Agricultural Research Bureau. Since the establishment of the Ministry of Agriculture and Forestry, the work has been put under the direction and supervision of the Department of Rural Economy. Before the war the crop reporters numbered more than six thousand, scattered over 22 provinces. The number has been reduced now to about 3,500, in more than 900 counties of 15 provinces. The report includes such materials as acreage and production estimates of the most important winter and summer crops, estimates of livestock, consumption of food, distribution of farm tenancy, rural industry, estimates of fallowed land and special products, statistics of land value and land tax, price index of agricultural commodities and index of purchasing power of the farmer.

2. Survey of the agricultural conditions of the Northwestern provinces. For the further development of that area and the preparation for the settlement of a part of the ex-service men, the Ministry of Agriculture and Forestry sent in 1944 three groups each with about twenty agricultural technicians to gather information on the following items: (1) population engaged in agriculture, (2) land, (3) climate, (4) farm crops, (5) forest, (6) livestock, (7) irrigation projects, (8) reclamation, (9) rural economy, and (10) organizations engaged in agricultural work.

3. Study of cost of rice and cotton production. This work was undertaken to facilitate the price control in China. Surveys were made in 1941 in various rice and cotton regions. In each region about 50 to 100 records were taken as representative samples. Several agricultural colleges cooperated with the Ministry of

Agriculture and Forestry in the field work and the primary analysis.

4. Research in farm management. Farm records taken by the Farm Management Associations mentioned above are sent to the Ministry for analysis. On the basis of the result of the study, individual farmers are informed by the field worker of the ministry of what has happened on their own farms as compared with that of others. Comparison is also made from year to year to show the historical development of the farm business. Although such examples can hardly be free from bias, the study still serves to improve farm management.

5. Study of marketing of rice, wheat and cotton. For these staple farm products, marketing centers have been relatively well developed in China. It has been the aim of the Ministry to find out the volume of business, the seasonal variations, the price spreads, the channels of shipment, the means of transportation, and the cost of transportation and handling. Dealers engaged in the business furnish necessary information; the local agricultural agencies also cooperate with the Ministry.

V. *Other Rural Welfare Undertakings.* For these works, the Ministry, together with its field workers, is primarily in a position of promotion rather than direct undertaking. We suggest the needs of certain undertakings, for example, to repair or to build up country roads, to establish rural schools, etc. in certain areas, and try to interest the rural community and the governmental institutions concerned and sometime to help the people organize. Whenever the project is started, the rural people usually contribute labor, and the governmental agency concerned contributes techniques and material.

A PUBLIC FARM LAND APPRAISAL SERVICE ITS DESIRABILITY AND PRACTICABILITY*

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WHEREVER land is held as private property, the general public, the state, the community, the owner, the operator, the creditor and many other interested parties, attribute to it a "value." When title to such land is transferred under free sale, when an estate is settled, in the course of foreclosure proceedings, when the courts adjudicate tax-delinquent property to the state, or when the courts condemn it under eminent domain, or whenever such property is encumbered, pawned, or deeded in trust, a "value" is determined or expressed in terms of a specific sum of money. When property is sold, the parties to the sale arrive at a compromise between their divergent concepts of the value, meaning the ratio of exchange in the market, and express it in terms of the sales price.

In any private enterprise economy, the value of land represents a considered opinion about the comparative usefulness of the specific tract in view of the supply of such land, its peculiar qualities, and the demand for it. The value of land is therefore one of the most powerful devices guiding and regulating the flow of investment into improvements of and on land, the settlement and development of rural areas, and the intensity of land use.

The value of the land constantly reflects, moreover, an estimate of the present and future business situation in agriculture and other forms of land use. A sharp, rapid decline in land values leads almost always to a serious crisis in farm credit. Hectic rises in land values lead to speculative investments, increased indebtedness, faulty estimates of the sustained economic yield of the farm enterprise, and a subsequent decline in values.

Thus the determination of the value of land, as a measure of its usefulness, is a matter of great private and public concern. In a mature capitalistic economy one might expect, therefore, that the theory, the methodology, the technique, and the institutional organization of farm appraisal would have reached such a high level of perfection that now only subtle refinements need be contemplated.

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But the real situation is far different. The theory of land appraisal is under discussion among a very few experts; no book about it has yet been published in English. Methodology is being developed empirically by private and public lending agencies. Only four or five of the land grant colleges offer courses in farm appraisal; and these have done so only for a few years. Appraisal techniques, similarly, advance by trial and error, but also through the systematic research conducted by the colleges of agriculture, the U. S. Department of Agriculture, private and public lending agencies, and private appraisal services.

This lag in the development of farm land appraisal has come about because the problem is complex. Moreover, it has been a difficult one to solve, from the practical standpoint, in a country whose population is so mobile, where conditions vary so widely over the Continent, and where agriculture's development has taken place with such breathtaking speed.

Although the situation with reference to the large and important field of farm land appraisal is still very unsatisfactory, substantial and solid progress has been made in the United States during the past 30 years. This progress is so impressive that it deserves careful study and consideration, for within it lies the key to further progress by means of the proper public policies.

Before reviewing the nature and scope of the accomplishments in farm appraisal, it seems advisable to define and illustrate first what is involved in agricultural land valuation and what, according to up to date standards, a farm appraisal ought to be. A most unfortunate ambiguity of concepts concerning land valuation exists, and there is no commonly accepted standard terminology. So great a variety of procedures is being followed that definition and illustration are mandatory.

The appraisal of any land to be used for agricultural purposes (including arable farming, horticulture, shrub and tree crops, forestry, grazing, part-time farming) involves the accomplishment of the following tasks:

Facts and data concerning the tract's physical assets for agricultural production, and its ability to provide a livelihood for those who live on and cultivate the property must be assembled. The appraiser in every case must verify or determine the data by carefully inspecting the site under circumstances which do not interfere with this work. Prominent among the data the inspection must

test is the physical yielding capacity of the land, taking into account the climate, topography, and soil conditions. The investigator, to do an accurate job, must have solid background and experience in farm management, special training in comparative soil rating, and familiarity with the particular region and its farming conditions. Continuity in this sort of professional activity is also mandatory. Without it the capacity of judgment fades.

Next, the appraiser must determine the lay of the land, shape of tracts, the internal and external communications (i.e., roads, highways, truck, rail, river, or canal transport facilities), the economic location with respect to nearby and distant markets, and the costs involved in buying farm needs and in selling produce. To discharge this part of his job, the appraiser must have, besides familiarity with farm management, much broader applied economic knowledge with particular reference to agricultural economics.

Among the other physical assets for agricultural production, the existing improvements on the land must be listed and inspected, such as buildings, fences, wells, dykes, ditches, pavements, tracks, loading ramps, stationary machinery, and other forms of long-term investment. For all of these a value has to be determined which shall reflect either the contribution these improvements promise to make to the commercial operation of the farm, or the sales- or scrap-price of each improvement. The appraiser collecting these data must have the knowledge of a competent farm manager and some special training in appraising various types of durable improvements.

A similar check-up should be made of all other inventories, live as well as dead ones, including actual commodity stores, as well as those that would be normal on the property under the most suitable type of operation.

Once all these data have been fixed, the property in question must be analyzed as to the opportunity it gives the owner to invest capital prudently over a longer period and to apply management and labor to it. The appraiser must evaluate the property's ability to give its owner a financial return from the joint application of all production factors, and its operator some satisfaction by way of accommodations and amenities for living. The property must be compared with the other property in the same region and the appraiser must carefully weigh special advantages against serious

defects and drawbacks. Farm appraisal requires in all cases travel, thorough and efficient inspection, familiarity with a certain area, and a great deal of experience in accumulating an "inventory" of knowledge on farm real estate, and the market for such real estate.

The rank such property holds with respect to competitive tracts of land will first of all be made as of the day of appraisal. This *pro tempore* appraisal is not sufficient. The appraiser must go beyond the accurately ascertainable facts and form a well-considered opinion on the place the property will probably occupy 10, 20, 30 or 40 years from the day of the appraisal. This projection of an investigated property into the future is an intricate and hazardous procedure. It involves a forecast of future changes within the "topography of land values." This undertaking demands constant observation of economic, social, and political trends, of shifts and changes, regional and local dislocations, trends in the prices of commodities, in the business cycle, and in the volume of domestic and foreign trade. All these observations are the special domain of the economic analyst.

Yet there is another partly technological side to the projection of the particular farm into the economic future. Farm technology is making energetic strides in many fields and its impact is in the longer run felt in the comparative advantage of certain climates, soils, locations, types of farms and farm people. For example, the immense increase in the domestic production of nitrogenous fertilizer, the downward trend of nitrogen prices, and the availability of phosphate fertilizer gives an increasing comparative advantage to moist sandy soils, particularly in climates with a long growing season for truck crops. New varieties of fodder plants tend to expand the fodder basis for meat and dairy cattle in the southern regions, while at the same time new processes of treating slash pine for paper pulp production have enhanced the profitability of a new type of forestry. Hybrid corn has improved the yield of corn and thus added to the profitability of land most suitable to corn production. New varieties of small grains will change their yield records, too. Powerful new insecticides and fungicides developed during the war will benefit farming in those humid and hot areas where lush plant growth now is jeopardized most by fungi and insects. Power-driven machinery to cultivate and pick cotton will lower cotton production costs on land most suitable to mechanized operation. The pick-up hay-bailer and special bale lifting and

loading equipment for trucks will cut the labor requirements on cattle ranches substantially.

These examples stress the fact that to be competent, farm land appraisal must not only anticipate the contingencies of the economic future in general, but must take into consideration major developments in farm technology and weigh carefully the extent to which such progress will become economically effective.

General economic policies cannot fail to have their impact upon the conditions which determine the economic opportunities for farmers. The more abundant the supply of capital becomes, and the lower the interest rates on long-term loans, the higher land values will be for the type of property paying the highest dividends on long-term capital investment. Great changes in the services and rates of transportation (water, rail, truck, bus, and air) similarly affect farming and rural living conditions, and this eventually will be reflected in land values. The regional or local rise or decline of industries may boost or deflate land values. Public investment policies fall into the same category. The glacial shift from property and corporation taxes toward high income taxes for all employed people must in the long run also have some differential effect upon land values.

The answer to the demand by the clients of the appraiser that he should forecast cannot be sought in the attempt to approach perfection in the art of lifting the veil from the future. On the contrary, it must lie in the most accurate and elaborate explanation of specific assumptions about the economic future upon which the appraiser has based his calculation of the different values he determined for a piece of property. This record of the underlying assumptions about the fluctuations of the main prices and other factors will permit those who want to use the appraisal document in later years to apply certain corrections without necessarily having the whole property re-appraised.

The valuation of agricultural land is as much an art and a skilled craft as is the appraisal of the health, the mental and physical ability, and the prognosis of the life expectancy of applicants for life insurance by the life insurance company physicians. Besides the entire resources of modern medical and all auxiliary sciences, those physicians practice the great art of using their own judgment in prognosticating into an unfathomable future, assisted by their own accumulated experience in that regard. Farm land appraisal

has many similarities. Today it requires much more than solid knowledge of local or regional farming, and it has to deliver a great deal more than a lump sum in dollars representing the final judgment of the appraiser, arrived at by some mysterious and highly secret method not even shared among the initiated members of the trade.

An up-to-date appraisal, worthy of the name, is a document containing all pertinent information about the appraised property in a well arranged standard form, as well as the results of the inspection and the judgment of the appraiser concerning the chief factors responsible for classification and valuation. This information must reveal in detail the process by which the appraiser formed his opinion and thus permit review and correction as basic data change. The appraisal must include several specific values, such as the market price, the sustained or "normal" value based on certain assumed minimum and maximum price levels for products grown or suitable to the land, a distressed sale or foreclosure value. In any case, the terms of value need to be defined clearly and elaborately on the appraisal form, so as to eliminate misrepresentations. The appraisal can always be no more than a considered opinion as of the day it was written. This fact must also be clearly stated in order to enable those who work with the document later to apply corrections. The appraisal may at any time also comprise answers to specific questions asked of the appraiser concerning specific qualities of the property. At the same time no appraisal can ever involve a responsibility for the risk incurred in actions or transactions by other parties who use it. Wherever possible, the aerial survey should be attached, because it permits measurement with remarkable precision the acreage of the tract as well as of certain parts thereof. Where important improvements exist camera snapshots offer better and more durable evidence than do descriptions and measurements alone.

It derives therefore that conscientious and competent appraisers need more than a good and well trained mind, a strong and healthy physique and a keen pair of eyes and ears. They need also the assistance of a variety of experts specializing in rendering such service to farm appraisers. This aid must cover many fields and must be adjusted to specific regional conditions, including tax rates and public utilities. It must conduct continuous observation and research in order to do a good job. In California and neighbor-

ing states, for example, such a service would have to provide water engineers to check changing ground water tables and the resulting risk to farmering, keep track of all irrigation developments, water costs, precipitation records for small areas, poisonous trace elements in water, changes in riparian and other water laws, bond issures by irrigation districts, etc. The service to the appraiser must consist also of continuous information about and supplies of the many technical aids available for appraisal field work, such as maps and surveys, planimeters, augers, calculation tables for buildings, and price lists for machinery and implements. Still another branch of appraiser service concerns well digested information derived from applied economic research. It must provide information in written form or orally in conference and discussion about markets and prices, farm sale prices, farm profits and losses, delinquencies, foreclosures, and many other developments.

A number of public and private agencies do provide surveys and analytical economic services to some extent. Yet an active appraiser cannot possibly digest the bulk of such widely scattered material, only a little of which is collected and presented for the purpose of giving special service to practicing appraisers in the field.

Exceptionally capable free-lance appraisers presumably might succeed in keeping themselves abreast of all economic drifts. But the sum total of their professional performances could not possibly yield the sorely needed fully satisfactory service to the public. Inevitably each of them would choose his own procedure, shape his own concepts, and make his special assumptions about many factors. A comparison of the appraisals of any two independent appraisers in contiguous territory having almost idential conditions would, in all probability reveal wide discrepancies in the appraised values, especially over a long period. No two appraisers will attach the same importance to economic events covering, for instance, a decade, exactly alike—unless they make continuous efforts to corroborate their information and to tune up their judgment. Values established by different appraisers will therefore vary widely over longer periods. If one covered the map of two areas with all the appraisals made, the values would show a marked boundary and a step from the domain of one appraiser to that of the other. Hence even the very best individual independent appraisals are bound to be incomparable. This fact alone is respon-

sible for an unnecessarily wide latitude or spread of land values, even within one township. The vast number of incompetent and biased quack appraisers exaggerates that margin of error to truly grotesque proportions.

So long as this situation prevails, even the best free-lance appraisals are a defective instrument for any sort of policy requiring a common base of judgment for action. The necessity of coordination in appraisals is well known to all farm mortgage and other agricultural lending institutions. It is one of the chief problems in all tax assessments and is overcome there by boards of equalization. In order to align a multitude of appraisals by many appraisers and make their work comparable, closest coordination in the training and preparation for field work of the appraisers is mandatory. Moreover, there must be recurrent conference among them, use and exchange of the same basic information, and continual competent and critical check and review of test appraisals by those in charge of an appraisal system. In other words, like the management of all good business, the task of coherent and comparable appraising requires the adoption and enforcement of a well considered policy. Such policy of coordination presupposes, of course, that a large staff of appraisers operates over a large territory, and operates under responsible and mature central management.

The pertinent conclusions to be drawn from the foregoing discussion may be summarized as follows:

1. Appraising agricultural land is a special profession that requires much training, skill, experience, continuous practice, and capacity for judgment.

2. To do a competent job, field appraisers need the continuous service of a research agency which will provide them with all the special scientific information they need.

3. While the individual valuation of landed property by free-lance appraisers is not impossible, it is invariably handicapped by resting on too small a sample and too limited experience, and values thus determined cannot be compared as to methods and results.

4. Only a large-scale appraisal service, with high caliber appraisers, a central research and service division, mature reviewing appraisers, and central management establishes the proper framework for a well balanced and reliable system of land valuation.

In the United States there are individuals who make appraisals

for a fee for anyone who wants them; that is to say, they will, inspect a property and say how much they think it is worth in the real estate market at the time of the appraisal. These men are not, by and large, full-time professional appraisers. Appraising in this country is a side line for practicing or retired farmers, for real estate or insurance agents, former tax assessors, and other people. A few gifted and honest individuals among them may be found in many parts of the country, having sufficiently good judgment to make sound appraisals; but even their reports suffer all the aforementioned drawbacks of all individual appraisals. Most of these men work for banks and are thus out of circulation for individual clients. However, for each of these few able men, there are scores of quacks for whose incompetence, bias, if not outright dishonesty, their clients pay dearly, often with all they own. The farm real estate market is strewn with wreckage caused by lump sum horseback guesses by this army of would-be appraisers, whose guesses always ride the crest of the wave of public speculative sentiment. Responsible to nobody, these men do immeasurable harm to public welfare. The fact that their majority have no *mala fides* does not make it any better, the less so since some appraisers are dishonest and set values in the interest of parties other than their clients. While in most of the states every barber needs a license, anybody who wants to can practice appraising farm property without any obligation whatsoever.

That this deplorable state of affairs can persist lies in the fact that most of the customers of the quacks usually need to have farm land appraised but once in their lifetime, or at least only once in the same community. There is, in other words, no association for the protection of the rights of clients of farm land appraisers.

The general public has in most parts of the country no choice but the motley crowd of free-lance appraisers. In the Mississippi and Missouri valleys, however, a few reputable companies specialize in appraising for clients, perform their job well, render real service within their area, and pursue a well considered appraisal policy. These agencies cooperate with private lending agencies and colleges of agriculture.

The most competent and extensive systems of organized valuation of agricultural land by full-time professional appraisers operate outside the reach of the general public. They belong to the large scale institutional farm mortgage lending agencies, foremost

among them the 12 Federal Land Banks, and the large insurance companies. The Federal Land Bank appraisal system is the only one covering the whole area of the United States. While insurance companies and the Federal Land Bank system represent the most advanced techniques of agricultural land valuation today, their appraisals are carefully guarded business secrets. Even their customers do not have access to the appraisal of their own property.

With due respect to the high appraisal standards of some of the leading insurance companies, the research and service resources and the techniques of the Federal Land Bank appraisal service are peerless in the United States. Since the inauguration of the Federal Land Bank system in 1917, an increasing effort has been invested in the development of an adequate appraisal system. During the last 27 years, the U. S. Government has subsidized the Federal Land Bank system, and has thereby contributed with public funds to the accumulation of invaluable experience and knowledge of the appraisal service and the research division for the entire system under the Farm Credit Administration. Nowhere else today is there a comparable wealth of accomplished research work, of carefully kept farm real estate and loan case histories, and of reviewed, time-tested appraisals. The highly trained and seasoned staff of appraisers is considered by private mortgage bankers as the greatest asset of the Federal Land Bank system. Yet the average citizen in need of an honest, competent, appraisal is just as lost as if that institution did not exist. The Federal Land Banks alone have access to and the use of this appraisal system, although it was constructed with great public funds.

This situation definitely calls for a change. Twenty years ago we had no public provision for establishing prima facie evidence for the actual quality of perishable farm produce. A farmer or a cooperative association could send a carload of perfectly healthy potatoes from California to Chicago only to receive a wire that the recipient had refused acceptance because most of the tubers were rotten, the few healthy ones had scab, and the boxcar was full of rocks, pebbles, and dirt. This incident took place usually when heavy carload receipts were glutting the market. Months later in court the most judicial judge could not determine in what condition the potatoes actually had been, because there were neither standards or grades of quality, nor trustworthy public inspectors. But today any farmer may have a sworn public inspector examine his

shipment of perishables for a fee, anywhere in the United States. Millions of dollars and an enormous amount of energy is thus saved, year in and year out. Moreover, the worst feature of dishonesty in the trade of perishables and agricultural produce in general has been eliminated.

It is high time for a similar service to be established for the general public with reference to the very complex quality of certain tracts of land and the ratio of their future usefulness. The purpose of such a service would be to eliminate a whole network of fraud from the farm real estate market, and to protect individuals and the public from the serious results of ignorance or misconceptions about the real value of farm land. This service would counteract the speculative psychosis of the buying public in times of land boom as well as the opposite reactions affecting all interested parties when the farm real estate market is glutted.

In order to bring about this sorely needed improvement, I recommend that the proper legislative action be taken to establish a nation-wide farm land appraisal service. It should be obliged to appraise landed property for agricultural use, for any applicant, individual, or corporation, private or public, for whatever purpose, who pays a fee for this service, excluding appraising for tax authorities. The fees should be a matter of public knowledge. The total revenues from fees should cover the expenses of the entire service, but costs to clients should be charged according to certain classes of property rather than the specific costs involved. The appraisers should be paid an annual salary. The appraisals should be submitted to the clients in a standard appraisal form, but should give due consideration to the special questions clients want answered. Any advice or opinions about financial transactions—investment in such property, the size of the loan or the sale—should be strictly forbidden and excluded from the appraisal. The appraisals should involve no liability or obligation by the appraisal service beyond honest and properly executed appraising according to the rules adopted.

The appraisal service of the Federal Land Banks should be severed from the banks and reorganized as an independent and self-supporting service under the Farm Credit Administration, and offer its services for a fee to the Federal Land Banks, any other government agency, and the general public.

The following improvements may be expected from such legislative action:

Opening the Federal Land Bank appraisal system to the public, avoiding the infraction of any existing right, will make available at a reasonable cost to every interested party at least one type of honest, unbiased landed property evaluation—something more dependable than the more or less substantiated opinion of a single person. The very fact that such service becomes available will have a salutary influence on the appraisal practice of all the free-lance appraisers. It will also introduce an element of greater confidence and certainty into the farm real estate and farm debt relations fields.

In turn, the Federal Land Bank appraisal service will further mature through detachment from the banks, because the banks would not be able to continue their present practice of imposing upon the appraisers a part of the banker's financial decision relative to the size and condition of loans, or the wisdom of granting such loans at all. This is not and never should be the job of any appraiser. He has a sufficiently complex task to perform as it is. Adding to it a share in the functions of a banker blurs the line of responsibility, and weakens judgment, frequently to the detriment of the borrower as well as the bank. The added responsibility often leads to an unjustifiably low evaluation of the property.

Once the appraisal service is freed from its close integration with the Federal Land Bank structure, it will be able to make much headway by operating as a going business concern with the sole purpose of attaining the highest professional performance with economy. That the appraisals become accessible to the public and thereby to criticism from outside experts will have a wholesome influence. Federal Land Banks should obtain priority rank as clients of the appraisal service, so that their demand for appraisals will be satisfied irrespective of the pressure for appraisals by other clients.

To these great expectations I entertain, a note of warning must be added. It is a mistake to believe that through such a public appraisal service a land boom can be kept in check or can directly influence the general level of prices paid for farm land in good or bad times, or that it can prevent the mass delinquency of debtors. It would be just as rational to expect the medical examiners of the life insurance companies to lengthen the life of insured people in spite of a wave of influenza or a sudden frenzy among them to fly flivver planes without a pilot's training. The tidal waves of land values are directed by powerful economic forces, such as the

profitability of farming and the general level of prices for farm products. Psychology is involved but it creates only the margin of error in the amplitude, not the wave itself. All that can be done by a public appraisal service is to establish in the field of farm real estate and agricultural finance a system by which those who wish may at any time, obtain at reasonable cost a reasonably accurate report with prima facie evidence about the probable quality of a piece of property as an investment, a source of income, a security, or a home site. That, however, would be a vast improvement over the present state of affairs.

Objections of course will be made to this whole idea. They can be expected from four groups with vested interests: the Federal Land Banks, the private farm mortgage institutions, the private professional appraisal services, and the free-lance appraisers. The Federal Land Banks compete to some extent with other mortgage lending agencies, and consider their highly qualified appraisal service one of their best business assets in rendering loan service. That they are correct in this opinion is evidenced by the fact that at present certain large private mortgage lending agencies are "raiding" the appraiser staff of the Farm Credit Administration and the Federal Land Banks for their most experienced and outstanding men. (I consider this selective transfer of appraisers from semi-public service in the cooperative land banks to private concerns as beneficial to the public.) The Federal Land Banks have kept their appraisal reports so strictly confidential that they are not even shared with the National Farm Associations. As a matter of prestige, of convenience, and competition, the Federal Land Banks may oppose the idea of losing their appraisal monopoly, although careful study may lead to a different attitude.

Irrespective of this possible opposition, it seems highly desirable that a public appraisal service nevertheless be established. By virtue of their supervision through the Farm Credit Administration, the Federal Land Banks are semi-public institutions. Their appraisal service has been developed with the aid of public funds. It would continue to operate for the Federal Land Banks, but would unburden them of excessive costs, particularly in times like these when they have to maintain a larger appraiser staff than they actually need. The permanent appraisal staff could be much more fully utilized, function on a much wider basis, and be available in greater strength whenever the Federal Land Banks had to expand its loans. The benefits accruing to the public and indirectly to the

Federal Land Banks and their borrowers would by far outweigh the inconvenience the transfer of the appraisal service would initially mean.

The private mortgage lending agencies, such as the insurance companies, may resent the increased influence of a public agency. In fact, however, these companies and their interests would be tampered with in no way. They could and probably would continue their own appraisal systems. They would be able to check from time to time on their own appraisals, moreover, by applying to the public appraisal service for the evaluation of certain pieces of property.

Private professional appraisal services could raise only the objection that their business might suffer from competition with the public appraisal service. This allegation would be justified only if the public appraisal service were subsidized. My proposal envisages however, a self-supporting service living on the fees it charges. I expect that the private appraisal services would not be affected at all, and that some of the farsighted leaders in this business will even endorse the plan for a public appraisal service.

The few competent free-lance appraisers will neither lose nor gain by the proposed service. They have their clientele now and will have it in the future. Perhaps for convenience they will adopt the same forms and apply the same methods as would the public appraisers. It is to be expected that free-lance appraisers will propose that appraisers be licensed. For the reasons explained earlier about the weakness of all individual appraising, this arrangement is no workable solution. Public appraisers should not be part-time half professionals, but full-time salaried appraisers. To service and supervise licensed appraisers who derive a part of their income from other activities, and to be responsible for their integrity and their work is beyond the capacity of any public agency. Even if some states were to introduce a licensing system for rural appraisers, it would in no way affect the validity of my recommendations.

The only people who would lose a substantial part of their business would be the self-styled horseback guessers. This, however, is one of the main purposes of the proposed legislative action.

There remains the fear in mortgage banking circles that a public appraisal service will lead to further encroachment of the government upon private business. To avoid this danger requires the proper form of administration and legal limitations for the service.

OLD-AGE SECURITY FOR THE AMERICAN FARM POPULATION*

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DURING World War II, social security programs have been amplified considerably in the British empire and Latin America, and similar developments are now occurring in liberated Europe. In the United States, the war brought domestic reform to a virtual standstill; after V-E Day, however, the interest in domestic matters increased perceptibly, and many signs indicated that changes would soon be made in our social security system. That public opinion would back an expansion of the system has been indicated by a Roper survey showing that a plurality of the American people believe that the program should be extended.[1] A Gallup poll query indicated further that 60% of the people believe that "the Social Security program should be changed to include" the farm population.[2]

The Present Noncontributory Old-Age Security System

In 1935 the Social Security act inaugurated an old-age insurance system, the cost of which is borne equally by employers and employees in covered industries. The same act also initiated a federal noncontributory program for old-age assistance; under this program the federal government contributes half the value of each pension granted by the state administration, the federal share of any assistance grant not to exceed $20.

Social Security board samples show that the old-age assistance program has aided proportionately more old persons in country than in urban districts. According to a study made of the residence of those added to the old-age assistance rolls in a given period, 25.8% of the total were of rural-farm residence.[3] Since the rural-farm population exceeding 64 years of age represented only 21.8% of the total aged population, according to the last census, it is ap-

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[1] Of those asked whether the government has gone too far or not far enough in providing security pensions, 15.4% did not know, 41.4% voted for an extension, 37.5% favored the present program as it is, and only 5.7% believed the program should be contracted. *Fortune*, Jan., 1945, p. 260.

[2] *Columbus* (Ohio) *Citizen*, Jan. 12, 1945, p. 3.

[3] Bureau of Public Assistance, Social Data on Recipients of Public Assistance Accepted in 1939–40, Research Memo. 1, Washington, April, 1941, Part I, p. 34.

parent that the agricultural population is numerically over-represented on the noncontributory pension list.

Although on the whole commendable, the assistance program is nevertheless inadequate from the standpoint of the farm population. Its defects can be said to fall into two main classes: first, the defects concerning the way in which the program is financed; secondly, those dealing with the requirements imposed upon applicants for assistance.

The size of the pensions is fixed by each individual state and is determined to a large extent by the state's fiscal capacity. For this reason federal contributory matching grants are made upon regressive principles: i.e., the larger the per capita income of the state, the bigger the per capita federal grant to the state tends to be, and the poorer the state, the smaller the grant. This has a direct bearing on the farm population, for there is a positive correlation between industrialization and income; since agricultural states tend to be poorer than industrial states, they receive less federal old-age assistance.

The fiscal factor helps to explain the considerable differences that exist between the states concerning the size of the assistance pensions granted the aged. Thus, in February of this year the average pension of the nation was $28.59, but the state averages ranged from a low of $11.26 in Georgia to a high of $47.31 in California.[4] Since the pensions granted in agricultural states tend to be less than the national average, it is probable that the farm population receives inadequate old-age protection under the assistance program.

The conditions under which assistance is granted constitute another barrier to adequacy. These conditions may be roughly characterized as requiring that those who receive assistance be virtually paupers without relatives able to support them. Federal old-age assistance funds are authorized to be used only in sharing the cost of aiding the needy aged. The determination of need is left to the individual states, and the states, in an effort to keep costs down, have been inclined to interpret need almost in the spirit of the old Poor law.

During the past decade the conditions imposed on applicants for pensions have in general become decreasingly restrictive, but the system is still one which in many ways is unsatisfactory to the rural

[4] *Social Security Bulletin*, April, 1945, p. 22.

rural population. The farmer's son who is struggling to climb up the agricultural ladder may be burdened with the responsibility for the care of his aged parents. The property provisions in many states debar an aged farm owner from receiving aid even if his income is inadequate, and even if aid is granted it is likely to be considered a claim against the estate.

Those whom the old-age assistance program has helped are primarily the individuals without property in the bottom income brackets who have no near relatives capable of supporting them. In the agricultural population this description would seem to apply most aptly to farm laborers. However, many of the laborers are excluded by residence requirements; in all but 13 states the requirement is the maximum permitted by federal law, the year preceding application, plus four others of the nine years preceding application.[5]

Negroes constitute another rural group which receives inadequate aid from the program. The Social Security board admitted on at least one occasion that the number of Negroes receiving assistance is low in proportion to the number who may need such aid.[6] Furthermore, in most states Negroes receive pensions slightly smaller than the pensions of whites.[7]

The Present Insurance System

Of approximately 53 million in the labor force in 1943, about 31 million were protected by the federal Old-Age and Survivors' Insurance system, which covers most industrial and commercial employees. The roughly 22 million who were not covered by the insurance program included agricultural laborers, the self-employed, domestic and casual workers, and those employed by governmental agencies and nonprofit institutions. The somewhat more than 8 million engaged in agriculture represented by far the largest single group of gainfully employed workers not protected by the insurance system.[8]

Although agriculture is rigidly excluded from insurance coverage,[9] the farm population nevertheless in two major ways does con-

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[5] Social Security Board, *8th Annual Report, Fiscal Year 1942–43*, Washington, 1943, p. 64.

[6] Social Security Board, *Fourth Annual Report*, Washington, 1939, p. 92.

[7] Sterner, Richard, The Negro's Share, New York, 1943, pp. 274–277.

[8] *Social Security Bulletin*, April, 1945, p. 38.

[9] The 1939 amendments to the system broadened the term "agricultural labor."

tribute at the present time to the fund from which benefits are paid. The actual incidence of the insurance taxes is not known, but there is some reason to believe that part of the burden is passed on to consumers in the form of higher prices; to the extent that this is so, the farm population, through its consumption, bears part of the cost of the insurance system.[10] The other manner in which agriculture bears part of the burden of the insurance program is more direct but involves only those members of the farm population who work from time to time in covered employment, paying insurance taxes but failing to meet the eligibility requirements for the attainment of insured status. Under the present system at least one-third, and probably more, of those who are taxed to support the system will never be able to qualify for benefits.[11] At the beginning of 1944 it was estimated that almost 32 million living persons, about half of the living persons who had contributed to the program, had not by that time attained insured status. Samples show that four-fifths of those who fail to gain such status fail because they have not worked in covered employment in enough quarters.[12]

Not known is the exact proportion of the farm population that works part of the time in covered employment but does not do enough of such work to gain insured status. However, several special surveys have been made. A six-state survey of migratory workers in 1940 revealed that 43.8% of them had paid some Social Security taxes in 1937-39, but only 6.4% had attained insured status. At about the same time a survey of local seasonal workers in Virginia showed that 12.3% had paid such taxes but that only 2% were insured. An investigation in Arkansas in 1941 disclosed that 18.1% of the operators had tax credits, but only 2.3% were insured, while 15.4% of the seasonal workers had credits, with 0.6% insured. In Iowa the same year it was found that 5.6% of the operators were credited, while 1.2% were insured, and 16.7% of the hired hands had tax credits, but only 1.3% had attained insured status.[13]

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and by this action excluded some half a million workers who previously had been classified as engaged in covered employment: A. J. Altmeyer, "Social Security for 'Industrial' Agriculture," *Social Security Bulletin*, March, 1945, p. 2.

[10] For a stimulating theoretical discussion of the incidence of payroll taxes see Part III of Seymour E. Harris' *Economics of Social Security*, New York, 1941.

[11] Witte, Edwin E., "Postwar Social Security," Postwar Economic Problems, ed. by Seymour E. Harris, New York, 1943, p. 273.

[12] Trafton, George H. "Uninsured Workers with Wage Credits under Old-Age and Survivors Insurance," *Social Security Bulletin*, June, 1944, pp. 3–10.

[13] For a more complete summary of the surveys noted above, and for bibliograph-

The eligibility requirements of the original Social Security act were so lenient that many rural workers who spend part of their time in covered employment could expect to qualify for an annuity. The simple requirements were that the claimant for an annuity must have received some taxable wages in each of at least five years, and the total amount of his taxed wages must exceed $2000. Under such a system not very many workers would pay taxes without receiving benefits; the fact that many now do so is a result of the 1939 amendments. According to the original act, it was impossible not to regain more than one had put into the system; if the age of 65 were reached without insured status being attained, the system paid the individual concerned a lump-sum equal to 3½% of his wages that had been taxed, and in case of death a lump-sum calculated in the same manner was paid to the estate of the deceased. Since the act scheduled a 3% tax on wages, the lump-sum represented a refund of taxes paid, plus a little interest.

The benefit provisions of both the original and the amended Social Security law stated that the maximum monthly benefit payable to any insurance account was to be $85, and the minimum was to be $10. But the original act provided merely for monthly annuities for insured individuals and for the lump-sum payments described. The amended system is much more complex in its benefit provisions, for it grants benefits not only to insured workers but also, under certain conditions, to their wives, widows, children, and parents.[14]

In spite of the many benefits for workers' dependents that were provided for under the amended and were absent under the original system, it was expected that the total cost of each of the plans would be approximately the same. In order to provide the new benefits for workers' dependents and yet to keep the total cost of the program from rising, two main steps were taken: (a) the size of the annuity payments to insured workers was decreased, and (b) the eligibility requirements were made so stringent as to ex-

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ical references, see Fred Safier, John Useem, Walter Quinn, "Farmers and Farm Laborers in Employment Covered by Old-Age and Surviors Insurance," *Social Security Bulletin*, June, 1943, pp. 18–24.

[14] For concise summaries of the original and amended insurance programs, see J. S. Parker, Social Security Reserves, Washington, 1942, pp. 68–74, and the Tax Foundation, Social Security, New York, June, 1944, pp. 13–20.

Because of the relative unimportance of the so-called "current" insurance benefits provided for in the amended act, for the sake of brevity this topic is not specifically discussed in this paper.

clude from insured status a large number of workers who were not fairly regularly engaged in covered employment; such workers would get back nothing of what they had put into the system, and taxes collected from them could be used in paying benefits to others.

To be eligible under the present system to receive a monthly annuity, a worker must have received wages of no less than $50 in covered employment in each of at least half of the quarters elapsing after 1936, or after the quarter in which the age of 21 is attained, whichever quarter is later, and up to but excluding the quarter in which the age of 65 is attained. An alternative method of qualifying is to earn a minimum of $50 in each of at least 40 quarters.

Two methods have been shown whereby the farm population is at present bearing part of the cost of the insurance program: (a) goods produced in covered industry, probably sell for higher prices than they would if no insurance system existed, and through consumption of such goods the farm population has contributed; (b) some members of the farm population who work from time to time in covered employment are taxed but gain no insurance benefits. Because of another factor that may take effect in the future, agriculture's share of the burden may increase. This will happen if it proves necessary for the federal treasury to contribute to the program, in which case federal taxes collected from the farm population will constitute part of the federal aid given the program. If covered payrolls become taxed at the scheduled rate of 6%, the system may or may not be self-supporting, depending on the actuarial assumptions that are made.[15] Assuming that a 6% levy would be sufficient if it went into effect as scheduled, the likelihood of such a thing happening is doubtful, for the present payroll tax of 2% was to have been increased to 4% in 1943, but this increase has been thrice blocked by Congress.

Old-Age Insurance for Farm Laborers

Since the time when proposals to launch a federal security system were beginning to be considered, there have been many who believed that agricultural wage labor should be included in the old-age insurance program. Those advancing the hope that agricultural labor be insured have stressed the need of such workers for

[15] Office of the Actuary for the Board of Trustees of the Federal Old-Age and Survivors Insurance Trust Fund, "Actuarial Factors in Old-Age and Survivors Insurance," *Social Security Bulletin*, April, 1944, pp. 10–15.

protection and their inability to provide their own security. Hand in hand with this idea has gone a reiteration of the fact that foreign old-age insurance systems commonly include agricultural laborers.[16] Finally, it has come to be believed by some that the exclusion of agricultural labor from insurance protection is a contributing factor in making farm work unattractive and thus in helping to cause a farm labor shortage.[17]

The opposition of the powerful Farm Bureau Federation was one of the factors explaining the exclusion of agricultural laborers from the insurance program. Concerning old-age insurance, the Federation declared its opposition "until such time as agricultural prices are restored to parity levels."[18] At its annual convention last December, the Federation approved a resolution calling for "coverage of farm labor by old-age and survivors insurance under the Social Security act when, in the judgment of our board of directors, a practical plan for extending such coverage has been developed."[19]

The most emphasized and soundest of the arguments which have been advanced against the inclusion of farm workers has been the claim that to include them would present too many administrative difficulties.[20] It is claimed that agricultural wages would be difficult to compute because of the different manners in which wages are paid, and that the industry is of such a diverse, scattered nature, having such a variety of crops and types of work, seasonal and migratory as well as permanent, that it would be exceedingly difficult to lay down any general rules that a social insurance administrative board could follow in dealing with agriculture. Finally, it has been pointed out that many farmers keep inadequate records on which to base an insurance scheme, and that any scheme requiring those farmers who hire only a little outside help to keep track of payroll

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[16] Agricultural employees receive old-age insurance protection in Belgium, Bulgaria, Chile, Costa Rica, Czechoslovakia, France, Germany, Great Britain, Italy, Netherlands, New Zealand, Peru, Spain, Sweden, Russia, and Uruguay: Wilbur J., Cohen, "Foreign Experience in Social Insurance Contributions for Agricultural and Domestic Workers," *Social Security Bulletin*, Feb., 1945, p. 5n.

[17] *Pennsylvania Farmer*, Dec. 9, 1944, p. 20.

[18] McCune, Wesley, The Farm Bloc, Garden City, New York, 1943, p. 173.

[19] Kahn, Dorothea, "Farmers Plan Abundance; Women Stress World Unity," *Christian Science Monitor*, Dec. 15, 1944, p. 9.

[20] For an elaboration of these difficulties consult the index of the Ways and Means Committee's Hearings on the Security Act Amendments; see "Administrative difficulties of insurance coverage," a sub-heading under "Agricultural employment"; House of Representatives, 76th Congress, first session.

deductions would cause these farmers disgustedly to throw their hands in the air.

In all probability the administrative difficulties could be overcome, for similar difficulties in covered industries have not been found to be insuperable. A possible solution to the problem of evaluating the different kinds of perquisites throughout the country is a periodical listing by the Social Security board of the regional values of the chief types of perquisites.[21] If the English system of flat contributions and flat benefits were introduced for American agriculture, the whole problem of perquisites would be sidestepped. Perhaps, even with differing benefits and contributions, the question could be handled with administrative ease by leaving it to the discretion of the parties concerned. If this happened, an informal custom might spring up whereby the cash value of perquisites to be received might be agreed upon by worker and operator before work began; the agreed-upon figure might even be put in writing, such a document to be binding unless obviously unreasonable.

To minimize bookkeeping, the favorite suggestion of those who advocate insuring farm workers is a stamp plan, many varieties of which have been used abroad, and many modifications of which have been suggested for usage in this country. Under all the stamp plans the farm operator would buy the stamps and would be reimbursed for half the cost of such purchase by deductions he would make from the worker's wages. At the end of each pay period—day, week, or month—the stamps would be pasted in the employee's book provided for the purpose, and the employer would "cancel" the stamps by writing on them in ink. The book would be sent periodically to the Social Security board, which would then credit the worker's insurance account with the value of the stamps in the book.

The stamps need not have many denominations. If the value of the tax stamps were figured on the basis of the wages to the nearest dollar, the only denominations that would be required at present would be 2¢, 10¢, 50¢, and $2.50. The stamps could be used conveniently if a wage-class plan were introduced to simplify matters. Under a two-class system, for instance, only two kinds of stamps would be necessary.[22]

[21] Corson, J. J., "Agricultural Workers and Social Insurance," THIS JOURNAL, Feb., 1942, p. 293.

[22] Murray, Merrill G., "Can We Insure Domestic and Farm Workers?" *American Labor Legislation Review*, Dec. 1940, pp. 159–163.

As compared with other lines of endeavor which have a comparatively large wage bill to meet, agriculture would be relatively unaffected if a tax were put on payrolls to cover the cost of social insurance. The cash wages per farm, according to 1940 census figures, averaged only $346. Estimating that about a third of farm wages are paid in the form of perquisites,[23] it can be seen that the total wages per farm were around $529. Thus in 1940 the average farm operator would have contributed $5.29 yearly into the old-age insurance fund for his employees. The majority of operators, however, would not be affected at all because most of them hire no wage labor. Census figures show that only 37% of the farms spent money on labor in 1939. Furthermore, 75% of the total wage bill was expended by the 16% of the farms in the top value-of-product brackets.

The inclusion of farm labor in the insurance plan would, however, require some adjustments, especially relating to incidence. A security program also might give some encouragement to share-cropping and tenancy, causing the break-up of farms which had employed wage labor.[24] If the program did result in an increase in share-cropping and tenancy, a solution might be to consider the landlord as the employer, requiring him to pay social security taxes on the income the tenant earned from the land; a solution along these lines was part of a scheme begun in France in 1935.[25]

Another possible result of the payroll levies would be an acceleration of the pace of mechanization of agriculture, for, with labor made more expensive, such substitution is to be expected. Increased mechanization tends to increase the size of the production unit, but any trend in this direction would be counteracted to some extent by the fact that the insurance program would give a competitive advantage to small family-operated farms, for such farms would not have to meet payroll levies.

The program also might tend to make the wage earner "more reluctant to undertake the risks of farm ownership if such a change in his status were to remove him from the protection of social insurance and possibly saddle him with the responsibility for the pro-

[23] Corson, J. J., "Agricultural Workers . . . ," *ibid.*, p. 289.

[24] Something similar to share-cropping resulted in the English fishing industry when unemployment insurance was introduced. Unemployment Insurance Statutory Committee, Share Fishermen in Relation to the Unemployment Insurance Scheme, H.M.S.O., London, 1936.

[25] Blaisdell, Thomas C., Jr., "Old-Age Insurance for Agricultural Workers in Western Europe," *Social Security Bulletin*, June, 1938, pp. 20–21.

tection of others."[26] The program also would encourage more mobility on the part of older workers, for they would be less interested than they are at present in maintaining their state residence in order to qualify for old-age assistance.

No valid objections are apparent to the inclusion of agricultural laborers, if the insurance program is considered alone. But such a step should be taken cautiously, for "So long as eligibility for benefits and the amount of benefits payable are directly related to a worker's past earning and employment record, the formal coverage of low-paid and irregularly employed workers in a social-insurance program may be a dubious advantage. For though legally covered they may not qualify for benefits, or if eligible they may receive lower payments than they could secure under some other program."[27] In other words, agricultural laborers should be included only "as and when revision of the benefit formulas and the minimum earnings requirement offer assurance that the benefits received . . . will be superior to those available under alternative security measures," according to the National Resources Planning Board.[28]

Chief among the "alternative security measures" is the old-age assistance program. When a comparison is made between the two programs, the wisdom of insuring agricultural laborers appears doubtful. When the assistance program, in June, 1944, was granting pensions averaging $27.55 per month, the insurance system at about the same time was paying its aged beneficiaries monthly annuities averaging only $20.89. The $20 figure included wives widows, and parents of insured workers, but the retired workers themselves were receiving annuities averaging only $23.53.[29]

It might be argued that the insured worker could be living quite well in his old age, because children and aged wife might also be getting annuities because of the husband's insurance account. But

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[26] Hopkins, William S., Social Insurance and Agriculture, Committee on Social Security, Social Science Research Council, Pamphlet Series No. 5, Washington, Sept., 1940, p. 31.

[27] Security, Work, and Relief Policies report to the National Resources Planning Board of Committee on Long-Range Work and Relief Policies, Washington, 1942, p. 459.

[28] N.R.P.B., National Resources Development Report for 1943, Washington, 1943, p. 77.

[29] Social Security Board, *9th Annual Report, Fiscal Year 1943–44*, Washington, 1944, p. 82.

"Social Security Board Begins to Pay on Its Millionth Insurance Benefit," *Christian Science Monitor*, Aug. 9, 1944.

not many men over 64 have dependent children under 18 and hence eligible for children's insurance benefits. And, while the wife of an insured worker may be receiving an annuity, the wife of a man on the assistance rolls may also be receiving assistance. Furthermore, the noncontributory benefits are less widely dispersed around their average than the annuities of retired insured workers are around theirs. In short, the insurance benefits received by those in the low income brackets compare unfavorably in size with assistance benefits; to change this anomalous situation, it has been suggested that the minimum monthly insurance benefit payment be raised above its present $10 level.

A further disadvantage of the insurance as compared with the assistance scheme, as far as the agricultural laborers are concerned, is that the insurance benefits must be paid for, whereas the assistance pensions are virtually free to the individuals who receive them. Thus, assuming for the moment that farm laborers could receive insurance benefits totaling as large as noncontributory pensions, the net result of including such workers in the present insurance instead of the assistance system might be to subtract from the aggregate income of the class an amount about equal to the total of the workers' insurance taxes.

From the financial viewpoint of the operator who hires labor, extension of the insurance program to his workers would appear to be undesirable. Part of the farmer's tax dollar, of course, goes to pay old-age assistance, and extending insurance protection to agricultural laborers would diminish the necessary amounts spent on assistance. Thus the operator's insurance taxes would not represent a wholly new burden, for part of what would have been paid for assistance would be paid instead for insurance. Probably, however, the other taxes paid by the operators would not be decreased by an amount commensurate with the burden of the new insurance taxes. Therefore, if the operators were unable to shift their insurance taxes, a net additional burden would result therefrom.

Old-Age Security for Farm Operators

The extension of social insurance to the self-employed would be desirable from the point of view of agriculture, for the some six million operators and their families constitute the greatest part of the farm population, and the income of most operator families is ordinarily meager. The exact form that old-age protection for the

self-employed should take, however, is not so clearly evident as the need for it.

Such protection might, for example, be furnished as part of a broad security program like the Wagner plan. The Wagner bill introduced in Congress in May of this year would include the self-employed in a general social security system to provide, among other things, for health, unemployment, disability, retirement, and survivors' benefits. Under this plan employees would pay a 4% tax on their wages, and employers would match their employees' contributions. The self-employed would receive retirement, survivors', extended disability, and health benefits, for which they would pay 5% of their income.[30] Indications are that the United States is not prepared, however, to accept such an inclusive social security system as the Wagner bill would provide. Certainly many American farmers are not ready for such a program, for both the Farm Bureau and the Grange, unlike the Farmers' Union, are opposed to government health insurance.[31]

A flat universal pension plan would be another method of providing the self-employed with old-age security. Such a plan could provide a pension either large or small and could be financed in almost innumerable ways. The only type of flat pension which has acquired any noticeable popularity in the United States is the noncontributory type exemplified by the Townsend plan. The objection to such a noncontributory type of flat pension system is that however small the size of the pensions at the outset, political pressure is likely to be brought to force the granting of progressively larger and eventually unreasonable amounts.

A system of sliding benefits for the total labor force would be another method of providing more old-age security for farm operators. This is the type of system which now protects employees in covered industry, and the framework of the present insurance system offers possibilities for the inclusion of the self-employed.

Under the present insurance system, the scheduled rate at which wages eventually are to be taxed is 6%, half borne by the employer. The self-employed might be included in such a program by levying

[30] *New York Times*, May 25, 1945, p. 10; for an unfriendly but informative review of an earlier Wagner plan (which instead of the above-stated 8% combined payroll levy on employer and employee and 5% tax on the earnings of the self-employed, provided for rates of 12% and 7% respectively), see The Tax Foundation, *Social Security*, Part II.

[31] "How Agricultural Groups Stand on Vital National Issues," *Christian Science Monitor*, Jan. 7, 1945, p. 7.

a 6% tax on his income; thus wage and other income would both be taxed at the same rate, and the self-employed, having no employer, would pay both the employer and employee contributions. Under such a plan, however, the moderately successful entrepreneurs would be helping to pay for the benefits of the less successful, and thus the political expediency of such inclusion is doubtful. Under the present system those with comparatively small incomes are scheduled to receive benefits worth more than what they and their employers have contributed, while those with larger incomes are to receive benefits worth less than the combined value of their own and their employers' contributions. Thus, after the scheduled full rates are in effect, "a worker of 20 entering the system . . . and earning $250 monthly could, with his employer's contribution, purchase a private annuity of $147.35 as against the $85 monthly maximum under the Federal plan."[32]

Another suggested method for the inclusion of the self-employed in the present insurance framework is to permit them to pay at a rate of only three-fourths that of the combined employer-employee contributory rate, the government contributing the difference. In such a system the benefits the self-employed would receive would, for each income class, equal or exceed the value of their contributions.[33] Here again the question of political expediency arises. Those getting back benefits worth only the value of their contributions would not favor such a plan, for they would prefer to have more freedom in the use of their money. Farmers in this group, for instance, might prefer to put the money into land or farm machinery instead of into insurance protection.

Still another plan would allow the self-employed to pay at only half the combined employer-employee rate. In this case the federal subsidy would of necessity be larger. Such a plan would satisfy the self-employed, for in every income class benefits would be larger than contributions. Politically, however, this plan is inadvisable, for it might meet with the objection of labor. Labor could point out that actually it pays part of the employers' contributions, because, in many cases, if the employer had not been subject to a payroll levy, labor could have forced higher wages. Labor might

[32] Epstein, Abraham, "Social Security," *New Frontiers*, March, 1937, p. 21; the maximum was not changed in 1939.

[33] Safier, Fred, Small Business Wants Old-Age Security, monograph prepared for Special Committee to Study Problems of American Small Business, Sen. Com. Print No. 17, 78th Congress, first session, Washington, 1943, p. 32.

question the desirability of granting subsidized benefits only to the self-employed.

A politically feasible system that would include the self-employed might be one in which the federal government would bear part of the cost of all benefits. Thus, assuming that a level 6% levy would make the plan self-supporting, the payroll tax could be placed at 3%, the self-employed would contribute annually 3% of their net income under $3,000,[34] and the government subsidy to the program would equal the sum of all the other contributions. If this plan were adopted, employees' incomes would be taxed at the rate of 1½%, to be matched by employers' contributions of equal size.

The idea of a government subsidy is not revolutionary, for, as the Advisory Council on Social Security pointed out, "Governmental participation in financing of a social insurance program has long been accepted as sound public policy in other countries."[35] The subsidy question, however, raises many problems. If a level-rate insurance arrangement is considered desirable, then the government subsidy in the early years of the program would not be needed for the immediate payment of benefits and so would go into the insurance reserve fund. It is not likely that such government contributions to a reserve fund would be politically feasible, and thus probably the amended law should merely read that subsidies would be provided when necessary to keep the insurance reserve fund from declining. Under these conditions, as the system matured, the size of the subsidy would grow.

The net cost of the subsidy to the treasury could be pared down by classifying insurance benefits as taxable income; thus, unlike the present procedure, the insurance premiums would be deductible but the benefits would be taxable, and so those in the upper brackets would pay back into the treasury as income taxes much of the value of the subsidized benefits received.

Besides the major matter of financing the program, other matters need be considered concerning the proposed inclusion of the self-employed. For example, the problem of estimating the income received by the self-employed is often difficult; the fact, however, that farmers do so yearly when they pay their income taxes shows that it can be done in an approximate manner. In the event of

[34] Under the present system, only the first $3,000 in annual wages of an individual is taxable.

[35] "Final Report of the Advisory Council on Social Security," *Hearings Relative to the Social Security Act Amendments of 1939*, Committee on Ways and Means, p. 39.

farm operators entering the system, a facilitating device that social security administrators might utilize, at least in some doubtful income cases, could be to ascertain how much the farmer in question would be forced to pay to hire a worker to replace himself; the administrators might use as a guide the monthly wage rates published by the Department of Agriculture.[36]

Whether only the cash income of a farmer should be considered is a debatable question. In the collection of income taxes, the federal government at present considers only cash income, whereas the State of Wisconsin includes the value of products consumed by the farmer and his family. Probably, if only for the sake of administrative ease, only cash income should be counted.

The present insurance clause barring benefits to aged workers who have not retired would be difficult to enforce in relation to insured farm operators. To determine the earnings of those partially-retired operators who live with one of their children would appear to be rather difficult. If operators are to be included in the system, the repeal of this provision should be considered.

At least one other change in the system would appear to be called for if the self-employed are to be included. The present program calculates benefits in relation to quarterly earnings, but it obviously would be more feasible for farm operators and many others of the self-employed to report their annual instead of their quarterly earnings. If the program were changed from a quarterly to an annual basis, this particular obstacle to the proposed expansion of the system would be overcome.

However it be accomplished, it would appear to be socially desirable to furnish the farm population with more adequate old-age security. The writer has expressed his belief that such increased protection is not only desirable but possible.

[36] Altmeyer, A. J., "Social Security for Farmers," *Land Policy Review*, Spring, 1945, p. 7.

HOW WOULD A FEDERAL SALES TAX AFFECT FARMERS?

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THE possibilities of a general sales tax as a war and postwar revenue measure of the Federal Government have received considerable attention in recent years. Since World War II began, numerous bills providing for many types of general and special sales levies have been introduced in Congress; and, although only a few special excises actually have been added to the law, agitation in some quarters for a general sales tax still is so great that most public and private postwar tax plans either approve or specifically reject one in their recommendations.

In this paper, a brief resume of Federal sales tax proposals and arguments commonly given for and against them, is followed by a study of probable effects on farmers of the particular type which presently seems to have widest support—the retail sales tax. An attempt has been made to show how significantly farmers would be brought within the orbit of the Federal tax structure by a levy of this sort; how provisions regarding exclusions, exemptions, rates, etc. would affect farm, as compared with nonfarm, groups; and how agricultural prices and the general cost-of-living level would be influenced. From a broad viewpoint, a Federal retail sales tax as applied to rural consumers presents an interesting study in tax incidence and demonstrates pointedly the significance of varying rates and exemptions of but one part of the whole tax structure.

Federal Sales Tax Proposals

The idea of a Federal sales tax is not the product of thinking in the period of World War II. Proposals were made in this country during the Civil War when widespread opposition arose to the newly imposed income tax and the extended system of excise levies, but opposition prohibited enactment of a general tax at that time. After World War I, considerable strength developed in a new movement for such a levy after much higher rates on personal and corporate incomes were imposed in the revenue acts of 1917 and 1918. Agitation for abolishing some taxes and reducing the rates of others was accompanied by a demand for a general sales tax as a substitute revenue producer. The matter became an important issue, but great opposition again developed—this time from "representatives

of the Federal Government, farm and labor groups, producers of raw materials, and marketing and industrial organizations"[1]—and public interest subsided until the depression years of the 1930's. During those years and since, interest in a Federal sales tax has alternately risen and fallen in intensity, but it has existed throughout.

Revenue demands of World War II probably created an all-time peak in agitation in some quarters for such a tax, but while a much more extensive list of selective excises has been introduced into the Federal revenue system, no general retail sales tax has been included. Now the subject is receiving wide attention as a postwar revenue measure and increasing emphasis doubtless will be placed upon it as a substitute for some of the more undesirable present taxes, or as a compensation for lowering the rates on some taxes which will be retained in the postwar system.

Kinds of General Sales Taxes

Specific proposals for a Federal sales tax vary widely in detail, but all of them recommend a broad coverage. Some would affect farmers much more than others. The *gross sales*, or *turnover* type, for example, would apply to most monetary transactions involving sales of agricultural and all other types of goods and services at wholesale, retail or other levels. When levied at the same rates, this form is the best revenue-producer of them all, but it is widely opposed for several reasons. The most serious objection lies in the fact that it would add greatly to the price of products made in several processes at different plants, but would affect very little the same product completely produced under one management. Thus the turnover tax discriminates against certain types and lines of business. Other reasons advanced for opposing this form of general sales levy are that it would require elaborate enforcement machinery, would complicate existing governmental price controls, and would tend to discourage investment by adding another burden to the productive process.

A manufacturers' sales tax has been advocated by many persons who believe it preferable to other forms. Since the sale of "manufactured" products would be the basis of the levy, this type would

[1] For a more detailed history, see "Considerations Respecting a Federal Retail Sales Tax." *Revenue Revision of 1943* (Hearings before the Committee on Ways and Means of House of Representatives, 78th Cong., 1st Sess.), p. 1095 ff.

necessitate the determination of conditions under which a farmer would be regarded as a producer and as a consumer. Would home-canned foods, for example, be subject to the tax when sold by the farmer-canner? If large quantities of a food were produced on the farm commercially and then prepared for the market by processing, would they be taxed? In Canada such a tax has been used for many years; and, after many changes in detail, it now is regarded as successful. Three factors are said to have contributed to its acceptability there. These are: "(1) The capacity of the majority party to obtain changes in taxation as contained in the Finance Minister's budget speech, (2) the extent of the authority delegated to the administrators of the sales tax, and (3) the good sense with which discretion is exercised by the sales-tax administration."[2]

The Canadian Manufacturers' Association, however, has vigorously opposed the tax on grounds that it "(1) increased prices to consumers, (2) increased manufacturing costs, selling costs, and overhead, (3) made the manufacturers tax collectors, (4) discriminated against manufacturers who produce and sell a complete product, (5) discriminated between one section of an industry and another section of the same industry, and (6) increased the costs of government."[3]

Because of the many objections raised in this country to the *turnover*, and to the *manufacturers'* form, some proponents of general sales taxes have offered the *wholesalers'* type as a substitute. Since the tax would be placed only upon wholesalers' transactions, farmers would not be directly affected by the levy. Opponents have introduced many considerations in opposition to this tax. It would be confronted with even greater administrative difficulties than the others, it is argued, and besides not yielding a large revenue, it would lack the "essential" requisite of applying directly to consumers. For all the above and other reasons, most proponents of a sales tax for the Federal Government generally suggest the *retail* sales type as the most acceptable from the viewpoints of both taxpayers and the Government.

General Considerations Favoring a Retail Sales Tax

One of the arguments for a retail sales levy which is advanced particularly by business groups is that it would result in no appre-

[2] *Revenue Revision of 1943, op. cit.*, p. 1233.
[3] *Ibid.*

ciable change in the present economic structure. The tax would be applicable only to sales of finished products (and services) to consumers and not upon the intermediate processes of manufacture even though they are separately developed in independent units. Since it would make no difference whether the seller is a wholesaler, manufacturer or retailer, there would be no tax advantage for purchasers to buy from one or the other, and hence no reason for reorganizations or realignments of businesses already established.

Another advantage attributed to a retail sales tax is that it is payable in small amounts "scarcely realized" as a burden, and there is "little delinquency." Thus the levy is convenient to pay—a desirable quality of any tax. The point becomes clearer if, for illustration, we consider the present Federal tax on cigarettes. Assuming a farmer buys one pack daily, it is far more "convenient" and "less burdensome" to pay 7 cents in tax daily for 365 days than to make one annual payment of $25.55 for the privilege of smoking cigarettes. The volume of delinquency is small if the law is efficiently administered.

Since over 20 States and several cities now tax retail sales, this type of levy already is familiar to many taxpayers. This is advantageous if one agrees with the frequently made assertion that "a new tax is never good and no old tax is ever bad." Too, the experience gained by the States and cities in administering the tax might provide considerable aid to the Federal Government in working out details of operation on the Federal level.[4]

Other general considerations said to favor a retail sales tax may be summarized without elaboration as follows: (1) It is a good revenue producer for the levying body and is easy and economical to collect; (2) it reaches every family and individual, thus making everyone aid in the support of government; (3) it avoids "undue" exemptions to low-income families and persons and at the same time exacts higher amounts from those who spend heavily for such "nonessentials" as cosmetics, jewelry, or silverware; (4) it reduces spending—an especially desirable objective during periods of excessive inflationary tendencies; (5) it gives the taxpayer some option to escape the levy by not purchasing taxable goods and services;

[4] While no effort has been made to analyze the arguments usually given for or against sales taxes (as summarized here), it is worth noting that a Federal retail sales tax undoubtedly would have important differences when compared with State or city taxes. This would indicate a source of confusion and compliance difficulty on the part of retailers and misunderstandings on the part of consumers in those jurisdictions already using a similar sales levy.

(6) it reduces the uncertainty of the distribution of tax burdens; and (7) it is a tax capable of being correlated well with progressive income and inheritance taxes in an integrated system.

General Considerations Unfavorable to a Retail Sales Tax

The primary objection opponents raise to a retail sales levy is its regressivity. That is, the burden rests more heavily (proportionately) upon farmers and others in the low income brackets than upon the wealthier, as shown in Table 1. For example, a consumer with a total annual income of only $1,000 would pay taxes on about

TABLE 1. APPROXIMATE AMOUNT PER $1,000 INCOME TAKEN BY RETAIL SALES TAX[1] FROM VARIOUS INCOME GROUPS, 1934

Income class	Percent income on which tax is paid[2]	Approximate amount taken by tax of:[3]	
		5 percent	10 percent
	Percent	*Dollars*	*Dollars*
$1,000 and under	60.0	30.45	60.90
$1,000 to $2,000	58.6	29.30	58.60
$2,000 to $3,000	49.4	24.70	49.40
$3,000 to $5,000	42.9	21.45	42.90
$5,000 to $10,000	39.3	19.65	39.30
$10,000 to $25,000	31.7	15.85	31.70
$25,000 to $50,000	22.2	11.10	22.20
$50,000 to $100,000	18.4	9.20	18.40
$100,000 to $150,000	15.5	7.75	15.50
$150,000 to $300,000	12.1	6.05	12.10
$300,000 to $500,000	4.2	2.10	4.20
$500,000 to $1,000,000	2.5	1.25	2.50
$1,000,000 up	1.0	.50	1.00

[1] Assumption of no exemptions is made.
[2] Estimates prepared by General Welfare Tax League on basis of statistics collected by *Business Week*, 1934.
[3] Based on table in Home Owner and the Sales Tax, Tax policy League, New York, 1935, p. 6.

60 percent of it, whereas one with $125,000 annual income would pay taxes on less than 16 percent of his. The actual sales tax paid by each would depend upon the rate levied, of course, but at 5 percent the former taxpayer probably would owe about 30 dollars out of his $1,000, while the other person would likely pay less than 8 dollars from each $1,000 of his income. It is interesting to observe that the person with a million dollar income probably would pay a retail sales tax on only 1 percent of it, and his actual tax bill would amount to only 50 cents per $1,000 income at a 5 percent rate.

Other general considerations inimical to a retail sales tax accord-

ing to its critics include the following: (1) It does not develop "intelligent tax consciousness," for the tax does not impress upon the taxpayer the social obligation to support government; (2) it presents many administrative difficulties such as determination of consumer versus producer goods (unless the latter were also taxed); (3) it may result in an arbitrary change of consumer spending (that is, from taxed to untaxed goods and services), and would tend to reduce total consumer purchases when they are needed to stimulate business and employment; (4) it makes no allowance for dependents, etc.; and (5) it upsets parity price determinations by price control agencies.

Effects Upon Farm and Nonfarm Groups Compared

Proponents of a Federal retail sales tax do not agree on details, although there is general approval of provisions for "broad" coverage. Since there is widespread opposition to any Federal retail sales tax, and many different recommended rates, exemptions, etc., it is difficult to select the type most likely to be passed by Congress—even for illustrative purposes. Some assumptions, nevertheless, can be made and these may be used in an analysis of probable effects of a retail sales tax on farmers. No attempt has been made to consider all possible combinations of provisions. Indeed, only those which appear to have received most discussion in hearings before Congress, or in recommended postwar plans are examined. In any sales tax law, provisions must take into consideration both the taxpayers' interest and the administrative problems involved. That is, both equity and the taxpayers' cost of compliance on the one hand, and the volume of revenue and administrative difficulties on the other are factors of considerable importance in any revenue measure.

Exclusions. The retail sales tax without exemptions generally is assumed to apply to all retail sales of goods and to a selected list of services. Nevertheless certain "exclusions" are permitted in most State sales levies, and Federal proposals commonly allow the same items. "Goods" include tangible personal property (with certain exceptions) and "services" include repair and fabrication services, laundry and dry cleaning, barber and beauty shop services, some public utility services and rental of taxable goods. Classes of goods usually excluded from the sales tax are fuel; transportation services; commercial, industrial, and agricultural machinery; feed, seed, and fertilizer; and articles sold to the Federal Government.

Thus the farmer would be subject to a tax on all his retail purchases except the few enumerated above which are primarily items used in the production process, that is, producers' goods. Because of the administrative difficulties involved, isolated transactions probably would not be reported, such as the sale of a small quantity of fresh meat to a neighbor by a farmer. It should be pointed out that administrative problems arise in this connection. Just what is a consumer good? What part of purchases made by farmers are used in production? Definitions become important in administering a retail sales tax.

Rates and Revenue. The question of rates is of particular importance to farmers and others subject to a sales tax. While they may be determined quite arbitrarily, often they are selected because of

Table 2. Estimated yields of federal retail sales tax, 1944

Type of sales tax	Tax base	Estimated yield at 5 percent rate	Estimated yield at 10 percent rate
	Million dollars	*Million dollars*	*Million dollars*
With exemptions	63,180	3,159	6,318
Food exemption	39,590	1,979	3,959
$170 per capita exemption	41,658	2,083	4,166

Revenue Revision of 1943, op. cit., p. 1151 ff. Estimates under the $170 per capita exemption are based upon a total civilian noninstitutional population of 126.6 million. For a later estimate, see H. P. Wald, "Variations of Retail Sales Taxes," *American Economic Review*, June 1944, pp. 281–302.

the volume of revenue different levies would raise. Hence there may be a close association between rates and the revenue desired from a given form of tax. This fact probably accounts for the wide variation in recommended figures for a Federal sales tax—from 2 to 10 percent or more. Few persons believe a graduated sales tax could be made effective and therefore a fixed percentage of sales value normally is suggested.

The rates most generally recommended for a Federal levy appear to be 5 and 10 percent. Most States having sales taxes impose rates not to exceed 2 or 3 percent, but it is thought that Federal revenue demands are so great, higher rates are desirable. Estimated yields of a Federal tax at 5 and 10 percent with, and without, exceptions are indicated in Table 2. As assumed in the Treasury study previously referred to, estimated receipts are based upon retail sales and services for the calendar year 1944, and certain classes of commodities are excluded from the calculations.

It goes without saying that a 10 percent levy on expenditures is

a heavy tax and that so high a rate would be particularly burdensome to low-income farm and other groups. It is argued, however, that this tax could be integrated with high personal income taxes which, to a large extent, are paid by nonrural people, and that two would result in a fair degree of equity. There are many who believe the Federal levy should not exceed 5 percent under any circumstances. The revenues received, of course, would be approximately half those under the above rate, and a 2 percent tax would yield a correspondingly less amount. It is interesting to observe that a sales tax excluding food sales will yield approximately the same revenue for the Government as one with a per capita exemption of $170.

As is indicated in Table 3, there is no uniform agreement as to the exact yield of this kind of tax. The figures given there appeared in

TABLE 3. ESTIMATED YIELDS OF A 10 PERCENT FEDERAL RETAIL SALES TAX

Source of estimate	Estimated yield
	Billion dollars
United States Treasury	5.8
Bureau of Foreign and Domestic Commerce	5.4
Office of Price Administration	4.9
National Association of Manufacturers	4.8
Raw Materials National Council	5.3
Brooklyn Chamber of Commerce	4.5
National Retail Drygoods Association	5.0
A. G. Hart, Iowa State College	5.0
Pennsylvania State Chamber of Commerce	6.6
American Retail Federation	6.0

Revenue Revision of 1942, Hearings before the House Committee on ways and means, 77th Congress, Second Session, Volume 1. Assumption is made that tax would apply to sales of all tangible personal property except those to Federal, State and local governments.

"Revenue Revision of 1942," and therefore are based upon sales of an earlier year than the one used in table 2. It should be emphasized that the sales tax rate probably would be determined after decision is made as to the amount of revenue needed from a sales tax.

Effects of Other Provisions

Exemptions. Because of the severe regressivity of a retail sales tax as indicated previously, some proponents of such a levy have recommended that liberal exemptions be provided. Others object to any form of exemptions. The most frequently mentioned arguments against food exemptions are as follows: (1) They reduce

receipts too much, (2) they eliminate taxation of luxury food items which should be taxed, (3) they introduce many administrative difficulties, and (4) they discriminate against other "necessary" products, such as clothing. Objections to a per capita exemption generally include (1) difficulty of administration, (2) arbitrariness of amount exempt, (3) unevenness of resulting burden since certain groups, such as farmers and children purchase fewer taxable items than do others, thus making desirable a complicated graduated scale of amounts exempt, and (4) reduction in public receipts.

Nevertheless, exemptions are widely urged. In the illustration given above (Table 2) the figure of $170 was assumed. It is believed that this amount, though somewhat arbitrarily chosen, probably would be enough for minimum annual food expenses, for one person, and it would require about $170 exemption to offset a food exemption so far as revenue to the Government is concerned. Since the effects of a sales tax with no exemptions, one with all food exempt, or one with a per capita exemption would be very different on taxpayers, particularly farmers, it is desirable to consider in some detail these various forms.

The peculiar significance of exemptions to all consumers is indicated in Table 4. Assuming a Federal sales tax of 10 percent it is noted that those receiving an average cash income of less than $500 would pay an *effective* rate of 9.4 percent with no exemptions, 5.7 percent if food were exempt, and −3.8 percent if $170 per capita were exempt. The effective rates paid draw closer together as income rises. For example, consumers with an average income exceeding $10,000 would pay 2.1 percent with no exemptions, 1.4 percent with food out, and 1.7 percent when $170 is allowed each taxpayer.

In this table also is seen a clear demonstration of the effect of exemptions on the regressivity of a sales tax. In the brackets given, the average effective rate begins at 9.4 percent for poorer farmers and other taxpayers, and drops to 2.1 percent for those with more than $10,000 income. The effective rate declines as income increases also where food is exempt (from 5.7 to 1.4 percent in the brackets given above). In the third category, however, when the exemption is $170 per capita, the poorest person pays −3.8 percent and the effective rate rises to a high of 3.9 percent in the $2,500 to $4,000 income brackets and declines to 1.7 percent in the top group. Thus in this latter case, the rate is first progressive and then

regressive in effect. From Table 4, then, it would appear that poorer taxpayers would suffer less burden with an exemption of $170 than in the other situations.

Size of Family. The size of the farmer's family has an important bearing upon the burden of a retail sales tax. Normally, taxpaying

TABLE 4. ESTIMATED PERCENTAGE OF CASH INCOME TAKEN BY 10 PERCENT FEDERAL RETAIL SALES TAX BY INCOME GROUPS, 1943

Income group	Tax as percentage of average income		
	No exemptions	Food exemptions	$170 per cepita exemption
	Percent	*Percent*	*Percent*
Under $500	9.4	5.7	−3.8[1]
$500 to $1,000	7.7	4.5	1.6
$1,000 to $1,500	7.2	4.3	3.3
$1,500 to $2,000	6.6	4.0	3.6
$2,000 to $2,500	6.2	3.9	3.8
$2,500 to $3,000	5.9	3.7	3.9
$3,000 to $4,000	5.5	3.5	3.9
$4,000 to $5,000	5.1	3.4	3.8
$5,000 to $7,500	4.5	3.0	3.5
$7,500 to $10,000	3.8	2.6	3.0
$10,000 and over	2.1	1.4	1.7
All levels	5.0	3.2	3.2

[1] The meaning of this "minus" quantity is that the average taxpayer would receive an excess of personal exemption over taxable expenditures equal to 3.8 percent of his income.

Revenue Revision of 1943, op. cit., p. 1166. Based upon data from Division of Research, Office of Price Administration and Division of Research and Statistics, Treasury Department.

capacity varies inversely with the number of dependents, and in the income tax this fact is recognized in the personal exemption provision. A sales tax with no exemptions falls heavily upon the taxpayer with several dependents, especially one who also has a small income. This is true because a very large portion of all income goes for expenditures subject to the tax. As a segment of the population, farmers have a larger average number of persons in the consuming unit than do other groups. In 1941, the rural average was 4.03, and the comparable urban figure was 3.09 persons.[5] Thus, other things being equal, a Federal retail sales tax with no exemptions would press more heavily upon farm than upon city people.

[5] "Spending and Saving of the Nation's Families in Wartime," Bul. No. 723, Bureau of Labor Statistics, Dept. of Labor, 1942.

With food exempt, part of the burden on big families is removed, because the percentage of all living costs attributable to food is relatively high, although as pointed out later, this factor is less important in rural than in urban families due to the fact that such food is produced on the farm and would not be taxable in any case. The large family would be least burdened if an exemption of a per capita allowance is made. In this case only, would the concept that tax capacity varies inversely with the number of dependents be recognized to the fullest extent.

The influence of the family size is indicated statistically in Table 5. In the lowest income bracket given ($750 to $1,000), size of family is relatively unimportant in the percentage paid when there is no exemption, and when food is exempt. The situation is very different in this income class, however, if the $170 per capita exemption is considered. Here the family of one pays 3.6 percent of his income in tax, but the family of eight receives an exemption credit 1 percent greater than his income. With this type of exemption, the larger families would pay no sales tax. In the highest income group portrayed in the table ($5,000 to $10,000), no families are exempt from all the tax, but the percentages paid vary although not as much as in the case of low-income brackets.

Food Produced on Farm. The choice of a food, or a per capita exemption is significant to farmers for another reason. A food exemption would be a disadvantage to farmers as compared with other groups since farmers produce a large protion of their own food and in any case this would not be subject to the tax. This would be partially compensated for, particularly during the war, because many urban people also produce some of their own food. Some estimates indicate that home-produced food accounted for 57 percent of the total money value of food for farm families in 1941.[6] The amount of food produced varies greatly among farm families, and the cost of producing it should be evaluated to complete the picture.

The home food factor has been cause for some to recommend that farm groups be differentiated from urban groups in the amount of exemption if a per capita exemption is granted. It is said that the cost of a "maintenance" food budget for a family of four would require about $448, based upon prices in August 1943.[7] This

[6] "Rural Family Spending and Saving in Wartime," U.S.D.A. Misc. Pub. 520, June 1943, p. 32.

[7] See *Revenue Revision of 1943, op. cit.*, p. 1164.

amount, however, varies with a number of factors. For instance, price levels change from time to time and the amount allowed would need to be changed in proportion. The determination of "necessities" would be an acute problem, since rural and urban

TABLE 5. TEN PERCENT RETAIL SALES TAX WITH NO EXEMPTION, WITH FOOD EXEMPTION, AND WITH $170 PER CAPITA EXEMPTION, AS A PERCENTAGE OF INCOME AT SELECTED INCOME LEVELS BY SIZE OF FAMILY, 1935–36

Income class and size of family	Average income	Persons per family (assumed)	Tax as percentage of income with:		
			No exemption	Food exemption	$170 per capita exemption
	Dollars	*Number*	*Percent*	*Percent*	*Percent*
$750– $1,000					
1	873	1	5.6	2.2	3.6
2	869	2	5.3	2.2	1.3
3–6	887	4	5.8	2.3	−1.9
7 up	886	8	5.2	2.2	−1.0
$1,500– $1,750					
1	1,617	1	4.7	2.0	3.7
2	1,612	2	4.8	2.3	2.6
3–6	1,625	4	5.2	2.4	1.0
7 up	1,628	8	5.4	2.3	−3.0
$2,500– $3,000					
1	2,703	1	4.0	1.8	3.3
2	2,716	2	4.1	2.2	2.9
3–6	2,729	4	4.7	2.3	2.2
7 up	2,746	8	5.0	2.3	.1
$5,000–$10,000					
1	6,827	1	2.7	1.4	2.4
2	6,926	2	2.9	1.8	2.4
3–6	6,855	4	3.4	1.9	2.4
7 up	6,757	8	3.9	2.2	1.9

Derived from data for 1935–36 in "Family Expenditures in the United States," National Resources Planning Board (1941), and "Consumer Expenditures in the United States," National Resources Committee (1939). Both urban and rural families are included in these calculations.

necessities are not necessarily the same. Also, adult dependents consume more than children, and an adjustment for the two would be desirable.

Farmer Expenditure Habits and Noncash Income[8]

Estimates indicate that farmers with money incomes over $1,000 spend significantly less on taxable goods and services (including food) than nonfarm groups—as shown in Table 6. Thus as a group,

[8] Statistical data for this section are taken from H. P. Wald, Variations of Retail Sales Taxes, *American Economic Review*, June 1944, pp. 291–292.

they would pay less retail sales tax. For income groups receiving less than $500 the opposite would be true. Since the number of persons per farm family in this group is much larger than that per nonfarm family, the rural consuming unit probably would spend more on taxable goods, although not in exact proportion to the number of persons.

Table 6. Expenditure patterns and effective sales tax rates by money income level, farm and nonfarm consumers, 1941

Net money income class	Average number of persons per consumer unit	Average Income		Average taxable spending		Average food purchases[2]	Food as percentage of taxable spending including food[2]	10 percent sales tax including food as percentage of money income
		Money	In kind[1]	Including food	Excluding food			
Dollars	*Number*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Percent*	*Percent*
Nonfarm consumers:								
0– 500	2.01	300	163	226	76	150	66	7.5
500–1,000	2.77	742	172	469	184	285	61	6.3
1,000–1,500	2.89	1,243	150	732	314	418	57	5.9
1,500–2,000	3.35	1,737	162	996	454	542	54	5.7
2,000–3,000	3.45	2,449	176	1,372	657	715	52	5.6
3,000–5,000	3.72	3,726	213	1,904	964	940	49	5.1
5,000 and over	4.35	11,696	358	3,810	2,137	1,673	44	3.3
Farm consumers:								
0– 500	3.74	270	417	267	136	131	49	9.9
500–1,000	4.04	737	529	471	248	223	47	6.4
1,000–1,500	4.74	1,226	557	625	330	295	47	5.1
1,500–2,000	4.30	1,701	602	779	442	337	43	4.6
2,000–3,000	3.52	2,439	603	1,014	572	442	44	4.2
3,000–5,000 5,000 and over	4.46	5,589	719	1,272	757	515	41	2.3

[1] Includes the value of home-grown food, housing of home owners, free fuel, and other goods received without direct money payment.

[2] Food expenditures in the original study include purchases of alcoholic beverages and other items which would probably be excluded from a food exemption under a sales tax. It is believed, however, that this fact does not significantly distort the above figures insofar as relative comparisons between farm and nonfarm consumers are concerned.

H. P. Wald, op. cit., p. 292. Computations based on statistical data published in "Spending and Saving of the Nation's Families in Wartime," Bul. No. 723, Bur. of Labor Stat., Dept. of Labor (1942).

It is true that farm families in all income classes receive larger amounts of noncash income (home-grown food, fuel, and house rental) than do nonfarm groups. Since this is nontaxable, farm families in all income groups would pay a smaller percentage of income (under a sales tax without exemptions) than would nonfarm groups.

Effects of Sales Tax on Farm Prices and Cost-of-Living Index[9]

One other aspect of the effects of a Federal sales tax, particularly significant under present war conditions, remains to be mentioned.

[9] For a somewhat more detailed statement, see *Revenue Revision of 1943*, p. 1194 ff. from which estimates in this section are taken.

By raising the level of farm parity prices, a retail sales tax levied under present parity provisions and with neither food nor per capita exemptions would affect many agricultural prices and retail food costs. The tax would apply to sales of many items whose prices enter the index used by the Department of Agriculture in the parity formula. A 10 percent Federal retail sales tax on food, clothing and similar goods (but excluding feed, seed, fertilizer, fuel, and agricultural machinery) would increase the parity index by 6 or 7 percent (depending upon the level of the index), which would raise the level of farm parity prices correspondingly. According to estimates made by the Bureau of Agricultural Economics and the Treasury in the early part of 1943, the index of prices received by farmers would have averaged 4 percent higher in 1944 than in 1943 if the tax had become effective in July 1943. Of course advances at the farm level would result in higher prices at the wholesale and retail levels; thus the increase in retail food prices during 1944 would have approximated 6 percent. With *direct* price effects of a 10-percent tax added, average retail food costs would have been 17 percent higher in 1944 than in 1943.[10]

Commodities other than food also would have been affected by a retail sales tax. Indeed, indications are that the effect on parity prices of a 10-percent tax would have been to increase the cost-of-living index of the Bureau of Labor Statistics by approximately 3 percent in 1944 in addition to the cost-of-living increase occasioned by the direct effects of the tax. The total increase then would have raised the cost-of-living index some 10 percent. It should be pointed out that these farm price increases would have raised gross incomes of processors, middlemen, and farmers in 1944 by approximately 2 billion dollars, according to estimates. To balance this, however, consumers would have paid about the same amount in added food costs in addition to the higher prices due to the direct application of a sales levy to retail food prices.

If per capita exemptions were permitted in a Federal sales tax, the effect on prices would be the same as those just discussed. However, a tax with food exempt obviously would have less effect upon food prices. As Mr. Wald concludes,[11] "A food exemption, on the

[10] These and supporting estimates were based upon assumptions valid in the early part of 1943. Any change in parity legislation or in the economic considerations involved might necessitate revision of the figures or even invalidate them.

[11] H. P. Wald, *op. cit.*, p. 295.

other hand, would reduce the tax effects on farm prices, if equal-rate taxes are compared, since the prices-of-food items included in the prices-paid index would not be directly affected by the tax. But, if the comparison is made in terms of equal-yield taxes, the tax with food exempt would cause a slightly higher boost in parity and market prices than would the tax without exemptions."

Summary and Conclusions

There are several considerations favoring, and others inimical to, any form of sales tax. If one is adopted by the Federal Government in the postwar period, it is likely to be based upon retail transactions rather than upon gross sales or those of manufacturers or wholesalers. The chief virtue of a Federal sales tax appears to be its ability to produce revenue inexpensively while the primary objection lies in its gross regressivity.

Some provisions such as those establishing coverage and rates would affect farmers precisely as they would others. In other respects, however, the impact of a retail sales tax upon rural people would be quite different. A tax with no exemptions, one with food sales not included, and one with say $170 annual per capita exemption, would have very significant differences when effects upon various groups are considered. Size of family and volume of home-produced food, and expenditure habits also are important factors to be taken into account in a sales tax. Finally, parity prices would be changed significantly with enactment of a Federal retail sales tax.

POSTWAR PLANNING AND THE RURAL-URBAN BALANCE

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MOST thinking about a desirable postwar employment pattern assumes that the way to prosperity in the future will be the same as it has been in the past. It assumes, in other words, that we shall have a constantly greater expansion of urban industry than of agriculture, with a corresponding further shift of population from the country to the town. Not back to the land, but forward to yet more factories, must be the watchword. Full employment in say 1950, as the United States Department of Agriculture envisages the matter, will occupy about 55½ million full-time workers, some 8 million of them on farms and the rest in nonagricultural occupations. That number of workers will be required to produce a national income of 150 billions of dollars, which is about the lowest figure compatible with full employment and at the same time with maintenance of our living standards. But the distribution of these workers between farms and factories will be different from what it is now. It will involve the transfer of many hundreds of thousands from rural to urban jobs, and also provision for a steady *continued* transfer of workers in the same direction. In this general form come all workable plans for postwar full employment, with no exception whatsoever.

Necessarily, however, the proposed greater increase of farm than of factory production presupposes markets. On this head the formulations up to now are vague. Obviously, the markets must be either foreign or domestic; but beyond this truism the analysis falters, for a reason which to be sure we must acknowledge to be formidable. If the market for an increased industrial output is to be sought in foreign trade, it must be exclusively a one-way proposition; it must involve additional exports but not additional imports. As a means of absorbing more production than would otherwise be absorbed, this foreign trade must be strictly an outlet and not an inlet. How to contrive, or even to justify such an arrangement, has economists baffled. On the other hand, the provision of a market at home for the desired increased industrial production obviously raises problems in income distribution. No wonder the dilemma persists. It should be resolved, nevertheless, in

favor of the domestic market, because a program simply for net exports would either speedily break down or head us straight for World War III, through the disruptive effect it would have on the world balance between farms and factories.

The purpose of this article is to consider some implications of the doctrine that the way to prosperity is through a greater increase of industrial than of agricultural activity. Undoubtedly, we need more expansion of factories than of farms, since the demand for industrial products can be stretched almost indefinitely while the demand for food cannot. Moreover, without a further shift to the side of industry we cannot fully profit by our farm technology, which enables agriculture to produce more and more food with less and less labor. These are truisms. But what are we to do with an increased industrial output? All possibilities boil down to some combination of three alternatives: (1) The increase in the factory output can be turned over to farmers, at constantly diminishing relative prices; in other words, on terms that will enlarge the farmers' income. (2) It can be sent abroad, with nothing brought back either in competitive or noncompetitive imports. As a disposal device, this proviso is indispensable; for if goods come in as payment for goods sent out, we have as much consumption to accomplish domestically as would have been necessary had the interchange not taken place. (3) Or the surplus can be consumed exclusively within the industrial community, through measures that will raise the buying power of the industrial personnel and of people in the associated trades, services, and professions. In practice, the disposal system would not present this simple threefold look. Some aspects of it might apparently defy classification; certainly, moreover, it would include some exchange of exports for imports. Nevertheless, from the standpoint of surplus disposal and of nothing else the three procedures mentioned and only these would be involved. Essentially, the choice would rest between foreign and domestic disposal of the surplus.

Foreign disposal of the surplus, it may be well to reiterate, necessarily implies net exportation of it. In other words, it forbids taking equivalent imports in exchange. With exports offset by imports, what we have is not really surplus disposal at all, but merely an alteration in the *form* of the goods supply. True, the new form may be more readily consumable than the old form; it may sometimes be much easier, for example, to move more pulpwood than more plumbing into consumption. Nevertheless, the consumption

even of the pulpwood requires consumer buying power. Unless consumption power rises proportionately with production power, consumption may lag almost as badly with foreign trade as without foreign trade. Truly reciprocal foreign trade, in short, is neutral as a surplus-disposal mechanism; it throws the matter back upon the home community, where indeed it belongs, as this article will try to show. On the other hand, foreign surplus disposal, by net exportation, is at best only a temporary method, since it leaves the payment problem up in the air. It has the additional draw-back of interfering one-sidedly with world trade—especially with that of countries that live by two-way traffic. Yet we are in danger of trying the net export plan, because the domestic alternative raises alarming problems in income distribution. In choosing we have to consider the domestic and foreign bearings simultaneously, possibly with main emphasis on the latter.

Many persons regard surplus disposal and foreign trade as practically identical. Actually, the two things may be scarcely correlated. Surplus disposal involves the clearing of markets that otherwise would stay glutted. Exchanging one thing for another may not do that, as the use of tariffs proves. It has been argued that trade may increase, with good effects on surplus disposal, not only between industrial and agricultural areas, but between countries that are highly industrial. The example usually cited is the prewar trade between Great Britain and Germany. As to the possibilities of this kind of trade for surplus disposal purposes, it is worth noting in the first place that in between the wars it represented only about 4 percent of Great Britain's retained imports and only about 6 percent of Germany's. Secondly, it encounters resistance from the growing similarity of industrial skills. In the big industrial commodities, such as steel, chemicals, electrical supplies, textiles, optical goods, and motor vehicles, the great industrial nations are neck and neck competitors. In these lines what they can usefully exchange is a diminishing quantity. Essentially, international trade requires an opportunity to exchange goods that are dissimilar, either in kind or quality. The main permanent opportunity lies in the exchange of factory goods for farm products and raw materials. But even this is not surplus *disposal*, which must remain a domestic problem though one with world-wide implications.

Naturally, the United States must consider its own interests; but what are these interests? Obviously, they are political as well

as economic, and the effects of our economic policy on international politics can be profound. In terms of sheer efficiency the industrialization program is sound, because it is the one approach to fuller employment and better use of human and material resources. The only possible objection to it is that it may get us into worse troubles than underemployment and relative inefficiency. About the only worse thing readily conceivable is war. By the net export method, the one that presupposes permanent foreign disposal of the industrial surplus, we might soon incur the risk of war, since the policy would cut into the livelihood of food-deficit industrial nations and at the same time oblige us constantly to watch a constantly increasing foreign investment. The other or domestic method of absorbing the growing industrial surplus would obviate this risk. It would match our consumption with our production, and at the same time would promote harmonious international relations, since it would be quite compatible with lively foreign trade, though this would have to be approximately equal and reciprocal, with exports offset by imports. If we do what is necessary to match our consumption domestically with our increased production, the industrialization program has a green light.

This matching of production with consumption is advisable, moreover, for another compelling reason. The proposal for a further shift in our rural-urban balance has a counterpart in similar recommendations offered for most other countries. For example, the international food conference held at Hot Springs, Va., in May and June of 1943, recommended more industrialization almost everywhere, as a means of increasing farm as well as factory production. Such a movement, the conference said, would lessen the pressure of population on the land, increase the average size of farms, provide jobs for displaced farm folk, make supplies of farm machinery and other things available, and broaden both the rural and the urban market. Obviously, however, rapid industrilization in many lands would carry them toward independence of the older industrial countries, and though the process might be slow it would be certain.

As the new factories rose to productivity, they would doubtless want tariffs against foreign industrial products. Also, the countries in which the factories were situated would presumably have less food to export. In short, the development would change the world-wide rural-urban balance, with notable effects in highly industrialized Europe, which might have to reconsider the virtues of restoring

its domestic agriculture. On the United States the effect would be largely confined to the export trade, since we are not vitally dependent on food imports. Even so, however, the effect would be considerable. Obviously, it would reinforce the argument for greater consumption of our industrial products here. If there is to be a world-wide lowering of the proportion of working populations in agricultural occupations, the movement in the United States must obviously be integrated in some way with the corresponding development abroad. As mentioned, the matter turns essentially on where markets are to be found. Temporarily, of course, the industrialization of new countries may provide a big opportunity for American exports, but if the trade develops with no preparation for a return flow it will lead to serious international trouble both economic and political.

It has been suggested that the indefinite expansion of industry beyond agriculture is a universal means of achieving higher living standards. If that is true, each country individually may develop a program independently, in entire indifference to any and all similar programs elsewhere. Manifestly, however, this is not the case. In fact Louis H. Bean, in a paper[1] which nevertheless maintains that in most places there is need for greatly increased industrialization, expressly points to the exceptions. These are the countries that depend on foreign agriculture. Examples are Great Britain, Germany, Belgium, the Netherlands, and recently even Japan. Such countries, Bean observes, may reduce the proportion of their rural to their urban populations only to the extent that they can draw on the agricultural products of other areas. Obviously, from a world standpoint, the opportunity to expand industry beyond agriculture is not indefinite but limited and highly competitive. Great development of industry in one country may require correspondingly great agricultural specialization elsewhere. If the division of labor breaks down, through the building up of industries in the previously agricultural areas, the originally industrialized countries must think about restoring their own farms.

This problem goes back to the industrial revolution, which expanded means of production but in some countries prevented national self-sufficiency. The outcome was not peace and good will,

[1] Bean, L. H. International Industrialization and Per Capita Income. Page 3. Presented at Conference on Research in Income and Wealth, International Bureau of Economic Research, New York, April 1944.

but fierce international rivalry. Paradoxically, the contestants measured their success by their growing insecurity, as reflected in their industrial exports and food imports. Hopes that economic interdependence among the nations would make them peaceable met rude disappointment. Thus the United Kingdom, with a population grown far beyond the supporting power of its own farms, lived by a compact with *foreign* agriculture. Other countries, less able to guarantee the safety of their supply lines, fell into the same position with more anxiety, and consequently with resort eventually to drastic programs for changing it. Under such conditions the world's total industry could expand not indefinitely, but only in a certain ratio with agriculture, with industrial development in one place balanced and compensated by farm specialization elsewhere. If any country entered the industrial rivalry without a vital need for food imports, it painfully complicated the problem for the others.

Certainly the industrial path, as long as it can be followed, leads upward in living standards. Many countries besides the United States have proved the fact. Familiar examples before the war were the United Kingdom, Belgium, the Netherlands, Switzerland, and Germany. Elsewhere the opposite relative emphasis on agriculture worked out in low standards of living, as in Spain, Poland, Finland, Hungary, Italy, India, and China. These facts would seem to reflect a general law, the effect of which might be counted on to be uniform and invariable. But recent history bears witness to the contrary. In western Europe, between the wars, the tendency in general was not toward relatively greater industrialization, but toward the upbuilding of domestic farms. Why, if prosperity can always be had simply by pushing industry beyond agriculture, did many countries in Europe move in exactly the opposite direction, and strive fanatically toward increased agricultural self-sufficiency? Everyone knows why. These countries had difficulty in selling their factory exports; they could not get enough foreign exchange to buy all they needed in the way of foods and raw materials, and had to set about producing a supply for themselves.

It is particularly difficult to explain modern Germany on the theory that prosperity requires merely an expansion of industry beyond agriculture. In pre-war Germany less than 25 percent of the population was in agriculture. This percentage, though higher than that of either Great Britain or the United States, was small by comparison with that of many countries. Previously, the shift

toward industry had worked favorably. Yet under the Nazis, and even earlier, Germany gave up the attempt to increase the ratio of industry to agriculture, and embarked on a program of encouragement to farming. Announced as part of an attempt to improve agricultural prices, the program soon came to have other more important objects, which turned out to involve the fate of the entire economy.

In the first place the policy was a response to the difficulty the country was having in exporting factory goods, and consequently in paying for imports. In 1933, when the Nazis came to power, German agriculture was in depression, along with agriculture throughout the world. Unlike American agriculture, however, it did not have large surpluses; on the contrary, the country was still importing agricultural products heavily. Farm prices were low because industrial employment was low; the national unemployment total had risen to 7,000,000. It would seem the remedy would have been to encourage industry; instead, the government chose primarily to stimulate agriculture, at the cost of further damage to industry, since the less farm production the country had to import, the less factory production it could hope to export.

Secondly, Germany's program was preparation for war, with the idea that conquest would give command of foreign foodstuffs and raw materials. She sought to establish a better rural-urban balance through territorial expansion, whereby German industries would thereafter have an agricultural foundation that could be considered domestic. The method was vicious—the underlying need comprehensible. In the ensuing peace Germany is likely to have a rural-urban balance struck in the reverse sense—in other words, not through expansion of the accessible agriculture, but through an imposed contraction of top-heavy industry. Here, in this one case, we can see the whole modern problem of the rural-urban balance, which invariably has an international aspect even for countries that have an abundance of farm as well as factory capacity. In the German swing from dreams of expansion to enforced industrial contraction as the basis for its rural-urban balance, we have evidence of a law which is truly universal; namely, the law that industrial development presupposes agricultural supports, either domestic or foreign. This is why, in our own plans for increased industrialization, we should be careful not to disturb the world-wide rural-

urban balance in such a way as to make life impossible for our friends abroad.

How our program might be developed with advantage to ourselves, and at the same time with no disadvantage to other nations, will appear from a consideration of the two possible forms. Suppose as the first and most undesirable possibility, the United States runs its industrial production far above its consumption. Obviously, the surplus may find an outlet abroad, where it will compete with foreign production. As a result, other countries will find the going harder when they try to sell their industrial products. They will have corresponding difficulty in paying for food imports, a matter that could be serious for many of them. They might be forced back yet again on their domestic agriculture, at heavy cost and with great reduction of their living standards. Meantime, the United States, would be turning over part of its output for consumption abroad, with no clear prospect of getting payment, and with the danger of irritating rather than pleasing its foreign customers. Needless to say, moreover, the operation could continue only as long as this country was willing to finance it.

Suppose, on the other hand, this country increases its consumption as well as its production, and gets the two things into balance. It will have the option of consuming the entire increase in the output directly, or of first exchanging part of it for desirable imports. Probably the second course will seem advisable, since it accords with retention of our comparative advantages in different lines of production. But, from the standpoint of so-called surplus disposal, whether we do or do not have more foreign trade will make no great difference. With consumption and production increased simultaneously, the entire necessary increase in the market will be domestic, and other countries will meet with no interference from our program in their own efforts to export factory goods and import foodstuffs and raw materials. Ultimately, in fact, they may find the going easier, since we shall not be using our increased industrial surplus to push our foreign trade aggressively, but merely to pay for what we need.

This sounds utopian, and perhaps it is, because, so far, we have not attentively considered what it would cost to match our consumption with our production domestically. It would cost a substantial change in income distribution. It might be necessary to

have extensive programs for low-income families, wage increases, extensive public works, increased leisure, and greater public encouragement to health services, education, the fine arts, and possibly sport. It would take big operations to make the consumption fully keep pace with the production of industrial commodities. Yet any important differential between the two would promptly check industrial activity, or force the country back upon the undesirable net-export policy. Only a clear sense of how bad that would be can obviate the hazard.

Partly, under the assumed conditions, the desired increase in domestic consumption might come about automatically, through the exchange of an increased quantity of factory production for an unchanged or not proportionately increased quantity of farm production. In other words, it would come about through an increase, expressed in differential prices, in the farmers' share of the national income. Most of the desired growth in the consumption of commodities, however, would have to be within the *industrial* community. This, of course, includes the so-called service trades, the arts, the professions, most governmental activities, and in fact all offshoots and appurtenances of industrial life—in other words, the entire urban system. Under a purely competitive determination of salaries, wages, rents, and profits the rise in the consumption level would be slow; but public action of one sort or another could speed it up.

Without a rational plan for consumption boosting, the further stimulation of industry could have some unhappy consequences such as the farmers particularly would not relish. Specifically it could involve a letting down of the bars to food imports. This would be a bad way to take goods for goods, because it would displace domestic products. With the increased industrial surplus exchanged for a foreign agricultural surplus, only industry would benefit. Agriculture would suffer. Herbert C. Hoover referred to this possibility as long ago as 1920, though naturally without endorsing it. True, he mistook the nature of the danger. After drawing attention to the extent whereby the industries were drawing workers from the farms, in the manner now proposed as a partial solution of the post-war problem, Mr. Hoover said: "If this balance in relative returns is to continue, we face a gradual decrease in our agricultural productivity. If we should develop our

exports of industrial commodities during the next 5 years as rapidly as we have done during the past 5 years, we shall by that time be faced with the necessity to import foodstuffs."[2] This country need not fear that its farms will become *unable* to meet the domestic demand for foodstuffs. But conceivably the farms may lose part of the opportunity to do so. Any import program that actually displaces efficiently produced domestic goods is undesirable, in that it contributes to unemployment. In the absence, however, of firm steps to keep consumption of factory goods in the domestic market, industrial expansion could lead very *quickly* to proposals for increased food importations.

Mark Sullivan referred to the possibility in 1926. He deplored the approach of a stationary farm population as likely to make American manufacturers wish to buy their food from countries that produce it cheaper. In an article entitled "Waning Influence of the Farmer,"[3] he declared: "Limitation of the export market (for agriculture) is not merely accepted but emphasized as a virtue. The policy of nonexport for the farmer and of aggressive export for the manufacturer must be a definite subordination of farming to other industries." Thus Mr. Sullivan anticipated one of the points stressed in this article. In proportion as industry goes deeply into production for export, and looks around for something to import in exchange, it may fix its eyes on foodstuffs and other agricultural products. It may form closer ties with foreign agriculture. In the reverse form, it may demand the policy which agriculture has often demanded for itself; namely, hospitality to imported goods not competitive with its own.

Curiously significant is a contrasting remark by John D. Black, in reference to the structure of world production implied by the resolutions of the (Hot Springs) food conference, which recommended virtually world-wide industrialization. "Such a world food economy," he observes, "would make the United States considerably *more* of a farming country than it is now. . . . But the United States would still remain a great manufacturing Nation, because of its abundance of coal, iron, other metals, and waterpower. In fact, her manufacturing would still expand, but not at

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[2] Hoover, H. C. Interrelationship of General Industry and Food Production. Western Doc. Engin. Jour., 25: 145–158. 1920.

[3] Sullivan, M. Waning Influence of the Farmer. World's Work. 51: 657–661. 1926.

as rapid a rate as her agriculture; and within her manufacturing there would be growth only in those lines in which her natural resources give her an advantage."[4] Here, in these contrasting views, we have the world-wide and also the American rural-urban problem in a nutshell. In which direction we move depends obviously on world developments as well as on our choice and policy. And since disproportionate development in one country in either industry or agriculture frequently presupposes compensating development elsewhere, the total world adjustment as Dr. Black sees it is necessarily to some extent a problem in world politics.

Thus even from the standpoint exclusively of farmers, the world implications govern. Merely unilateral handling of the rural-urban balance is impossible. Farm policy must express more than just a desire for lessened competition and wider markets; it must suggest what can be done with relatively increasing industrial production. In the absence of a satisfactory plan, agriculture's wishes could boomerang. One way has been mentioned; industry might use against agriculture an argument that agriculture has used against industry. It might contend, when its export trade raises the problem of payment, that exports of one kind presuppose willingness to take imports of another kind. Other ways have been indicated more fully, especially the risk that an unripe industrialization program here could produce bad reactions abroad. Hence if we want increased industrialization we must be willing to arrange for increased domestic consumption. This cannot come about automatically because with incomes competitively determined we get an income distribution that inhibits full consumption.

Ultimately, indeed, the matter goes far beyond economics. In both Germany and Japan, for example, we can see a wish to balance expanding industry with more agriculture than they have at home. But with this wish they couple racial and political objectives, in an amalgam of economics with biology. Here is the very soul of aggression. Similar fusions of economics with biology may harass the world again. Possibly they point to the need of a cooperatively determined, world-wide rural-urban balance, within which national self-sufficiency would not be desired, since the relative proportions of industry and agriculture in different countries would be adjusted amicably and reciprocally. This, how-

[4] Black, J. D. Food Enough. p. 249.

ever, is a distant goal. As long as it remains unattainable, different countries will try to balance their industries with such agriculture as they have or can reach. Nevertheless, we need not drop the hope of some approximation to a compact; in fact, this is the purport of the Hot Springs resolutions. Meantime, the problem for the United States, in working out its rural-urban balance, is to determine first where the market is to be for increased industrial production and how this market will get buying power, and then to reckon the probable impact of the set-up on farm and factory production elsewhere, so that world cooperation will at least not be hampered. This is not altruism, but prudent self-interest, because for the sake of stable peace the postwar world will need to exclude economic as well as political isolationism.

NOTES

MORTGAGE INSURANCE FOR FARM HOUSING*

THE thesis of this paper is that mortgage insurance and large-scale mortgage banking, though differing in institutional arrangements, are similar in basic functions as both pool risks and provide borrowers with a channel to the central money market. The purpose is to explore some of the considerations involved in proposals frequently made that credit insurance be adopted as an aid to the betterment of rural housing.[1]

The Urban Parallel

The mutual mortgage insurance system of the Federal Housing Administration in the urban field also includes a residual Federal guaranty. Although lenders under the plan buy mortgage insurance by payment of a premium and thus pool risks, in the event the reserves of the insurance fund are inadequate, the Government bears the residual loss.

Perhaps this combination of insurance with governmental guaranty in the FHA plan tends to cloud the distinction between insurance and guaranty. The phrase "Government insurance" may mean any one of three things:

1. Governmental guaranty of credit.
2. Governmental establishment of the mechanism of an insurance institution in which the risks are mutually shared by the parties to insurance by virtue of a reserve accumulated from premium payments.
3. A combination of both an insurance plan and governmental guaranty.

When the Federal Housing Administration was first established lenders relied more on the governmental guaranty than on the strength of mutual mortgage insurance. More recently there are indications of an increasing faith in the insurance aspects of the program.

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* Several officials and colleagues of the Department of Agriculture with whom this manuscript has been discussed have offered most helpful comments and criticisms. The author alone is responsible for the views and opinions expressed.

[1] Statement of Secretary of Agriculture Claude R. Wickard before the Subcommittee on Housing and Urban Redevelopment of the Senate Special Committee on Postwar Economic Policy and Planning, January 17, 1945.

As explained in succeeding pages, the alternative to a credit insurance institution is a mortgage banking institution. Both can accomplish the same functions. The Government can add its guaranty to the operations of either or can allow either type of institution to be self-sufficient. In the urban housing field a mutual mortgage insurance program was developed after a limited mortgage banking system already had come into existence. The FHA provided the insurance mechanism and it has done a relatively large volume of business. The Federal Home Loan Bank System, which predated the FHA, was not conceived as a full-fledged mortgage banking system.

The Federal home loan banks were conceived as lenders of last resort but not as fully integrated mortgage banks. In practice they have performed largely a central banking function for their members to carry them over periods of temporary shortages of loan funds. The membership of the Federal Home Loan Bank System is comprised almost entirely of savings and loan associations which for the most part rely on local capital resources and make mortgage loans over a comparatively restricted territory.

As the Federal Home Loan Bank System operates:

1. The risk of the mortgage loans remains almost entirely on the local lending institutions. The local institutions do not shift a significant element of risk elsewhere even if they borrow from the Federal home loan banks because the banks have full recourse on the local lenders.
2. Funds of the central money market are not made fully available to local mortgagors because advances of the Federal home loan banks are limited to 10 years and more recently in practice are limited to a matter of months. The banks do not hold mortgages from their initiation to their maturity. No secondary mortgage market based on a standardization of mortgages is achieved to parallel the FHA plan. Funds of the central money market become a significant influence on local mortgage markets only when local savings and loan associations seek temporary loans to meet needs, pending accumulation of more local savings. Insofar as the Federal Home Loan Bank System is concerned, the central money market is a source of temporary aid to a community rather than a continuous competitive element in the local mortgage market.

Had the Federal Home Loan Bank System been designed so that it could have bought mortgages without recourse on local lenders or could itself have originated loans, it could have pooled the risk of lending by large-scale widespread operations and could have tapped the full resources of the central money market by the sale of consolidated trust notes.

The system of mutual mortgage insurance provided by the Federal Housing Administration as supplemented by the RFC Mortgage Company and the Federal National Mortgage Association may be credited with two principal accomplishments:

1. The risk of lending on the security of home mortgages has been pooled so that lenders have been able to expand such loan business in comparative safety.
2. Funds of the central money market have been made accessible to home buyers through the development of a "secondary market" for standardized home mortgages. Unit banks and mortgage companies are able to sell these standardized insured mortgages on a moment's notice to insurance companies, trust funds, or other financial institutions. The certainty of an outlet is further assured by the fact that the Federal National Mortgage Association, an RFC subsidiary with substantial resources, stands ready as a central banker to buy or sell any volume of mortgages that may be offered or wanted.

Basis for Choice

The choice between a completely integrated mortgage banking system and mutual mortgage insurance must be made on political and administrative grounds rather than on the basis of any supposed distinction in ecomonic function. Credit insurance on an actuarial basis permits the pooling of risks. Moreover, in combination with standardized mortgages and an ever willing buyer such as the Federal National Mortgage Association, it can tap the central money market. Mortgage banking on a large scale can do no more.

Credit insurance operates through local lenders but in the case of new house loans under the mutual insurance plan of FHA, the insuring agency appraises every separate mortgaged property. A mortgage banking system must have local representation too, but need not deal through local lenders unless it chooses to do so. A

mortgage banking system can accomplish any basic economic function which a mortgage insurance system can achieve. Both are institutional details for accomplishing similar basic purposes. They are unlike in that insurance encourages local lenders while the mortgage banking approach favors the formation of a large-scale direct lender. If the collateral must be examined by the national agency or by an acceptable expert appraisal agency in any event, there may be no outstanding administrative economies in one system as compared with another. An expert appraisal agency might be established by the Government and made available to all lenders on a fee basis. In such an event the two systems would be on a par with respect to the cost of appraisals. If administrative economy is achieved by integration of lending functions, the mortgage banking approach should prove superior. On the other hand local agencies have the advantage of offering convenient local contacts to borrowers and in this particular the insurance plan may have an advantage. Moreover, local lenders already have established organizations and perhaps can include a greater volume of mortgage lending without a perceptible increase in overhead costs.[2]

Loans for Farm Housing

Lenders in the farm-mortgage field making appraisals in the past have given principal consideration to the earning power and prospective sales value of the farm. Evidently, lenders have given little encouragement to new or improved housing because housing has been presumed to contribute only in a minor way to earnings or sales value. Loans for housing have not been readily available except to farmers with little or no other mortgage debt. The Farm Credit Administration has made only a small volume of loans for housing. The Federal land banks are limited to loans not exceeding 50 percent of the value of the land mortgaged and 20 percent of the value of permanent improvements.

But the necessary unity of farm and home virtually precludes the development of an independent credit system for farm housing. Loans for houses must be tied to loans for farming.

Loans can be made available for housing either by broadening

[2] Casualty insurance companies once sold mortgage insurance to small-scale mortgage bankers doing a loan business in urban territory. Reckless appraisals, and the absence of a Nation-wide appraisal and inspection system were the immediate causes for serious losses. Most companies offering such insurance withdrew from the field about 1926.

the functions of the existing mortgage banking system, or by the establishment of a parallel insured credit system. Either system must regard the farmhouse as secondary collateral and the farm as the prime consideration.

It would seem probable that either the insuring agency or the large-scale mortgage bank would require an appraisal by an expert appraisal agency which, as recently proposed, could be independent of the insurer or mortgage bank. The initial expense of making a loan probably would be similar under either system.

Various technical means have been proposed elsewhere for broadening the functions of the Federal land banks and the Land Bank Commissioner so as to permit a greater volume of loans for housing.[3] Parallel recommendations have been made to broaden some of the loans of the Farm Security Administration to give greater consideration to housing.

If, instead of broadening the functions of existing agencies, a credit insurance program is developed, it is difficult to see how it can avoid some encroachment on existing activities, especially of the Federal land banks. Indeed, if it is intended that such banks become solely farmer-owned in the immediate future, an important consideration is whether or not commercial banks and other lenders should be given the advantage of insurance, especially if given a start with Federal aid. The competitive advantage of mortgage insurance for business-quality loans made by private lenders might jeopardize the volume of business of the Federal land banks. It would be difficult to offer commercial banks insurance only for loans with which farm structures are built, modernized, or repaired as mortgage insurance for farm structures would necessarily cover the entire farm. If credit business of the type now performed by FCA is divided among aggressive competitors, the Federal land banks might be checked in their effort to retire Government capital and become solely farmer-owned.

Credit insurance would make the banks more competitive both by increasing available loan funds and by making possible more attractive terms to borrowers. Loan funds would become more readily available because the banks could sell standardized mortgages on the central money market. Such sales would be especially

[3] Pending draft of report by working group on Housing of the Interbureau Postwar Planning Committee of the Department of Agriculture.

easy were there an ever ready buyer like the Federal National Mortgage Association standing by to assure a market at all times. Moreover, banks probably would be permitted to carry a larger volume of insured than of uninsured mortgages. Such is the case with FHA insured mortgages.

Credit insurance probably would permit banks in most parts of the country to offer loan terms as attractive to the borrower as those offered by the Federal land banks. This is now possible only in limited areas. The local banker would be warranted in making long-term loans at low rates of interest if the resulting portfolio could be quickly shifted by sale to another holder within a short time. The risk of loss on account of mortgage defaults would be largely eliminated by the insurance arrangement. Hence the bank could afford to lend at moderate rates. With increased lending power and a more attractive loan to sell, the commercial banks could offer the Federal land banks keen competition.

If the Federal land banks are to remain governmental institutions and available primarily for emergency periods, then a competing insurance program may be encouraged as a matter of equity to private lenders. In fact the FCA probably could establish such a system without an increase in its own overhead. But once the credit insurance is available, it will be difficult to confine it to the fields not already served by the Farm Credit Administration. The volume of land bank bonds might be reduced. Bond flotations thus might become both difficult and expensive. The bonds would at least require a governmental guarantee. Any attempt to make the banks self-sufficient and completely farmer-owned might then be defeated.

The case may be a little different for tenant-purchase or farm-enlargement loans such as the Farm Security Administration provides. Such loans are made to borrowers who can afford little or no down payment for facilities purchased. The total volume of loans is limited to congressional appropriations available. The losses on defaulted loans not covered by interest income are borne by the taxpayers. Now it is conceivable that instead of limited appropriations, Congress might prefer to underwrite a larger volume of private loans for such purposes including housing, perhaps in combination with an insurance fund so that local lenders ostensibly, though not in fact, would bear part of the cost

of risk. If rates were high enough to cover average risk, a large-scale lender or insurance agency would bear only the risk of its own mismanagement or poor judgment.

If loans were made at rates including a mortgage insurance premium which are insufficient to cover the average risk, the Government would continue to bear at least part of the risk just as now. Under the guise of lending to a farmer, a local bank would be lending money to the Government, which would be responsible to the bank as an underwriter of loans. The only difference between this and the present system is that the Government could easily become liable on a larger volume of loans unless the volume of insured loans were as limited relative to need as the usual funds appropriated for FSA loans.[4]

The FSA probably could administer a completely integrated loan agency providing supervised credit more efficiently than were responsibility divided with local lenders. This is an inference that should be tested by reference to the experience of life insurance company mortgage departments, Government loan agencies, and by experimentation. It seems apparent, however, that banks cannot service a rehabilitation loan and give proper guidance to the borrowers. If the FSA is to provide the supervision and the banks the money, probably the existing integrated FSA loan system is preferable instead.

Conclusion

The evidence here presented seems to indicate that mortgage insurance and large-scale mortgage banking, though differing in institutional arrangements, are similar in basic functions. Hence, the choice between the two rests primarily on administrative and political considerations rather than on differences in the economic functions performed.

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[4] H. R. 2239, 79th Congress, 1st Session, "Farmers' Home Corporation Act of 1945" proposes a "farm tenant mortgage insurance fund" for insuring mortgages otherwise eligible under the revised Bankhead-Jones Act. The 1-percent premium on 90-percent loans with all collections, administration, and borrower supervision borne by the Corporation would seemingly be insufficient to carry all costs. The Federal Government would in effect guarantee the solvency of the insurance fund. Such loan insurance would be limited to $100,000,000 per year.

NOTES ON "*THE ECONOMIES OF PUBLIC MEASURES TO SUBSIDIZE FOOD CONSUMPTION*," WITH AN EXTENSION OF THE ECONOMIC PRINCIPLES OUTLINED TO INDIVIDUAL COMMODITIES

MR. SOUTHWORTH in his article[1] explores the uses of food subsidy measures, and the type of programs suited to them. In his economic analysis he deals with "all foods," stating that "in the case of all foods collectively, it seems likely to the author that demand is somewhat inelastic and increasingly so at higher income levels. There are probably individual foods, however, for which the demand is elastic, at least on the part of most families in certain income ranges."

Although our knowledge regarding the market demand for food is limited, these assumptions seem reasonable. One should recognize, however, that the demand for each of the individual foods in the collection may be quite elastic while the combined demand is inelastic because of internal substitution. We know that the composition of the diet varies widely between regions, income groups, national origin, etc., and given the right price conditions, there seems little reason to believe that wide shifts in consumption from one food to another within a major category will not take place over a relatively short time.

The demand for individual fruits and for individual green, yellow and leafy vegetables is no doubt elastic due to the willingness of consumers to make substitutions. Consumers shift, for instance, from bananas to berries or to peaches as a breakfast food for use with cereals or alone; from citrus juice to tomato juice as a breakfast drink; or from beans to cabbage to cauliflower to broccoli or peas, etc., for a green vegetable, as these items come into season and prices decline. The demand for potatoes, rice, and other starchy foods, on the other hand, may be quite inelastic especially in areas where they are respectively considered as staples, because of the lack of substitutes as price increases or the tendency to turn to foods offering more variety as price decreases.

Currently the War Food Administration is committed to the support of most of the chief farm products at not less than 90 percent of parity for at least two years after the war. Under this

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commitment and with limited funds, the Department of Agriculture will at times probably have to consider programs designed to support the price of *individual* commodities as well as all foods as a group. For this reason it is especially important to analyze the effects of the various subsidy measures for individual foods.

In making such an extension to individual commodities one is faced with the difficult task of evaluating programs both for their effect on individual foods and on food as a whole.

In the section on *Effects on Prices, Total Revenue, and Non-Participants' Consumption* Mr. Southworth considers the effects of the subsidy on prices and revenues at the retail level for the market as a whole. In figure 5C he shows the general case where Supply (s) increases in response to an increase in price and concludes that "as in the first figure, however, if non-participants' demand is inelastic, so that their expenditure increases, the increase in revenue will exceed the effective subsidy."

The inference here is plain, if the non-participants' demand is elastic their expenditures will decrease and the increase in revenue will be less than the effective subsidy.[2] The analysis which Mr. Southworth has made therefore deals both with the case where the demand is inelastic for all foods individually and collectively and with the case where the demand for all foods as well as the demand for each of the individual foods is elastic. He does not, however, consider the case where the demand for a major category of foods taken as a group is *inelastic* while the demand for each of the several individual foods may be elastic due to opportunities for internal substitutions.

Programs which subsidize the consumption of low-income consumers depend for farm income effect, upon the response of non-participants to the reduction in supplies available to them. If their demand is inelastic, their expenditures for the major category of foods as a group will increase as well as those of the subsidized low-income consumers and the revenue from the whole market for the entire group of foods will be increased by more than the subsidy. But what is the effect of such programs on the returns from the sale of the individual commodity being subsidized for which the demand is elastic? A reduction in supplies of the subsidized commodity available to non-participants and the resulting increase in

[2] In using the term "effective subsidy" we will accept Mr. Southworth's definition: "that part of the subsidy that is not diverted to non-food uses."

price to non-participants will decrease the consumption of that commodity by non-participants. Since the price of the subsidized food is now relatively higher than that of the competing foods in the same group, the non-participants will tend to shift from the subsidized food to competing foods and as a result bid up the price for competing foods as well as for the particular food being subsidized. The net result of such a program, therefore, is an increase in revenue from the sale of the subsidized commodity, somewhat less than the amount of the effective subsidy plus an increase in the revenue from competing commodities as well. Programs which subsidize the consumption of low-income consumers tend to increase the income from the entire category of foods and distribute the benefits of the subsidy among producers of all competing foods. Such programs are, therefore, not the most effective as far as the producers of the subsidized commodity are concerned.

A general price subsidy to all consumers on the other hand reduces the price of the subsidized commodities in relation to the prices of competing commodities and tends to cause a shift in consumption away from such competing commodities to the subsidized commodities. With a general price subsidy all consumers will increase their consumption of the subsidized commodities and if their demand is elastic, the increase in revenue to farmers will exceed the subsidy. For the major category of which the subsidized food is a part, total returns will be reduced, however, when the demand for the category as a group is inelastic. This means that a part of the gain in revenue to the producers of the subsidized commodity must come at the expense of producers of competing commodities. This small reduction in revenue from competing commodities should be of minor importance, however. To summarize, a general price subsidy program, when compared with programs which increase the consumption by low-income consumers, has the advantage of concentrating benefits of the subsidy on the subsidized commodities rather than in distributing them to producers of all competing commodities as well as the one being subsidized.

This effectiveness of a general price subsidy in concentrating the benefits of the subsidy on the subsidized commodity is an advantage which should not be overlooked in planning for post-war adjustment programs. Price subsidies increase farm returns by more than the amount expended in the form of the subsidy when

the demand for the commodity is elastic. They are most useful in the case of commodities for which the demand is most elastic and if applied to markets where the demand is most elastic.

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PROCEDURES OF STUDYING RETURNS FROM CONSERVATION FARMING

TO MAKE a comparison of returns from conservation versus non-conservation farming at least two methods are available. One would be to compare returns from the farm operations of Mr. Smith in 1937 prior to the application of conservation practices with those of Mr. Smith in 1944 after sufficient time had elapsed to put a conservation program into operation and measure its effects. The other would be to compare the methods and returns of Mr. Smith and Mr. Jones in 1944 and obtain thereby a comparison of a conservation and a non-conservation farm in the same year. Several hazards of analysis are characteristic of each type of procedure.

The study of production on an individual farm over a period of time has the advantage that no doubt exists as to the comparability of soil resources, since the farm is identical. The operator also may have been the same over the whole period. However, the weather varies considerably from year to year and in comparing the averages of even two or three years at the beginning and end of a period, it is difficult to determine that this factor has been balanced. For instance, the weather in Iowa was much more favorable to crop growth in the years 1940 to 1943 than from 1936 to 1939. The opposite relationship existed in parts of Maryland and Virginia. Thus, in comparison with the earlier period, a farm in Iowa without any increased use of conservation practices (and without any other practices especially designed to increase yield) might show greatly increased production, while in Virginia the increased use of the best practices might have produced a smaller yield in the latter period.

The effect of price variation on cost and income factors over a ten-year period is likely to overshadow the entire effect of conservation practices one is striving to measure. Thus, if one were comparing incomes and production in the period 1940–42 with those of

1934–36 he should bear in mind that for the United States as a whole, the following changes in prices and income took place:

Item	1940–42, *percent of 1934–36*
Farm expense rates	106
Farm prices of products sold	121
Quantity of agricultural production	125
Gross farm income	151

For individual products, regions, or localities, even greater changes took place during the same period.

A part of this handicap of varying costs and prices may be overcome by expressing major items of cost and production in physical units and applying identical prices. Over a period of time, however, the whole crop pattern may have changed considerably for reasons other than conservation, such as the raising of soybeans and peanuts in wartime or the restriction of wheat acreage in peacetime.

While the operator may have remained the same over the whole period of observation, yet he introduces many changes in his farming system which should be excluded from the effects of a conservation farm plan. He may buy a tractor, begin using hybrid seed corn, or selected strains of small grain, or become more efficient in the feeding and management of livestock. He may have increased the size of his farm as he acquired more capital or he may have decreased the intensity of his operations with approaching retirement or physical disability. Thus while he is still Mr. Smith he may not be the same kind of a farmer in 1944 as in 1937. His income from sources not directly related to conservation may have changed to the same or to a greater degree than from his increased use of conservation practices.

The foregoing handicaps of studying a farm over a period of time to measure the effects of some changed aspects of his business do not mean that this method has no utility for this purpose. On some farms the effects of changed conservation practices may be so striking as to leave no doubt that the result might have been due to vagaries of the weather or to a new number on the seed bag. A recent monthly report cited a McLean County, Illinois, farm on which the adoption of a complete conservation plan, including soil treatment, the use of terraces and contour strip cropping has resulted in yields of 70 bushels of corn per acre on light timber soils which would not produce 30 bushels ten years ago. On the other farms, however, the conservation effects are more nearly of the 5

to 10 percent variety while in the period of establishment, returns may have varied from 10 to 50 percent due to other causes.

The second method of comparison involves the study of so-called "conservation" and "non-conservation" farms in the same year. This method obviates many of the difficulties of measurement described above but introduces others almost as formidable. In the same year prices and climatic factors can be assumed to be non-variable between the two groups if the farms do not extend over too wide an area. However, the character of soil resources may vary widely between adjoining farms. For instance, a group of non-conservation farms in North Carolina had larger incomes than conservation farms in the same area because of having a larger acreage of land adapted to growing tobacco.

Variation in size of farm may have effects on income quite independent of conservation practices. In addition, all of the changes in practices not related to conservation which have been shown to affect income on an individual farm over a period of time may cause an even wider variation in income between farms at one point in time.

The above considerations make it necessary in studying conservation effects in a given land resource area or sub-area to sort the farms for comparability in land resources (proportion of land use capabilities), size of farm, and in many cases by type of farm, or other factor. A definition of a "conservation" farm program in terms of land use and farm practices for the kinds of soil resources found in the area is also necessary. Very few of the farms might grade 100 percent as conservation farms according to this standard. The comparison of returns might be between farms with over 80 percent of conservation practices (weighted according to importance) with farms matched for land use capability and size of farm but with less than 50 percent utilization of conservation practices.

The definition of a conservation farm must involve something more fundamental than cooperation with a soil conservation district. A non-cooperator might have a higher proportion of important conservation practices in effect than a cooperator in the early stages of application of a farm conservation plan. It would be necessary to devise proper weightings for vegetative, mineral, and mechanical treatments as they apply to the soils and land uses in the area. The conservation rating would not reflect the adequacy of present farm plans which are in some stage of application but

rather the degree of current effectiveness of conservation practices already applied. For practices which require two or three years to be effective, this time factor would be taken into account. For instance, lime applied to cropland this year would not receive as much credit as a conservation practice as a similar area limed three years previously with sufficient time elapsed to affect not only the yield of small grain but also the growth of a legume sod crop and a row crop. Likewise, a farm with the first year of a good crop rotation would not merit the same conservation rating as a farm in its fourth year of this rotation even though the crop acreage proportions this year might be the same in the two cases.

This second method of measuring the present effects of practices already established has the advantage of making it possible to get information from more farms per year than by the first method. This would give more assurance that the effects of factors not related to conservation practices were averaged out of the comparison. While the use of this method in successive years on the same farms would strengthen the validity of conclusions, it would enable one to get much quicker results than by the historical method of comparison on the same farm. It is also believed that it would result in more dependable conclusions even though the amount of effort and expense by the two methods were the same.

To think through in greater detail some of the steps in procedure which would be involved, let us make some assumptions for a specified situation which will be illustrative of method only since the kinds of land, kinds and sizes of farms, and the conservation recommendations would need to be worked out locally. A Soil Conservation District in the Corn Belt has about 524 farms with 51 to 79 percent of Classes I, II and III land and with less than 20 percent of Class I land. A little over one-third of the farms in the District fall in this soil resource category. Of these 524 farms, 190 are from 60 to 139 acres in size. Of the 190 farms, 70 have dairy cattle as the dominant enterprise, and on 83 farms the principal source of income is from beef cattle or sheep. The first step would be to determine whether the 70 dairy farms and the 83 beef cattle and sheep farms of 60 to 139 acres in size and with similar soil resources were the most likely groups to study further. One might also consider the 125 beef cattle and sheep farms of more than 220 acres in this same soil resource group as a prospective source of conservation comparisons.

The next step would be to define in general terms what a conser-

vation program means for this combination of resources. This would be done by the district conservationist and work unit leaders with the assistance of zone technicians, soil specialists, district supervisors, and available Research specialists of the Soil Conservation Service or State Experiment Station. Available Research information applicable to individual practices in the conservation of soil and water in the locality should be brought together for the benefit of technicians and others who will help to decide which practices will be considered most important, and the weighting to be given each. The consideration of farm conservation plans already being applied in the locality would also be helpful in this respect.

The local group would note that about two-thirds of the land on farms in this soil resource group was adapted to the growing of harvested crops and that practically all of the cropland was Class II or Class III capability. For purposes of simple illustration let us assume that practically all of the cropland needs lime and phosphate application, contour tillage, strip crop protection, winter cover and a minimum application of manure to support a standard crop rotation of 33 per cent each of row crops including soybeans, small grain, and grass-legumes. Terracing is also indicated, especially if the proportion of row crops exceeds the standard recommendation.

By local determination the following proportions of emphasis might be placed on specified conservation practices in weighting their importance in soil protection:

Conservation practice or land use		*Percent*
Proper land use		
Permanent cover on land not adopted to crops		12
Rotation of crops on cropland		35
Percent of sod-legumes	20	
Percent of row crops	15	
Cropping practices		
Manure and fertilizer applied		10
Lime applied		5
Strip cropping		5
Approved winter cover		5
Contour tillage		15
Water disposal		
Terracing		6
Drainageways		7
		100

These proportions of emphasis and the specific practices included might vary for farms in each soil resource group even within a Soil

Conservation District and surely would vary between different parts of a region or between regions. The attempt would be to identify a limited number of key practices and not to include all conservation practices which might be applied to some part of the farm.

To obtain a conservation rating for individual farms the most important land treatment factors would be considered for a five-year period prior to the year of measurement of results. Triple-A records might be used to bolster the farmer's memory as to acreage of specific crops in the previous five years. The mechanics of a method of applying a rating for individual factors to individual farms are illustrated in Table 1. A maximum attainable score has been set up for all factors except the percentage of grass-legumes in the rotation and the so-called "manure equivalent." For these factors some flexibility is provided by allowing additional credit for performance above the standard to offset to some degree deficiencies in other factors. The schedule of values in Table 1 would be set up locally to fit the characteristics of the soil resource combination to be studied.

This method of calculating conservation ratings with the assumed values shown in Table 1 is applied to four farms which are similar in soil resources, size and type but which vary in the degree and kind of conservation performance experience. Farms 1, 2, and 3 probably would be classified as "conservation farms." Farm No. 2 with a strongly conservational cropping program lacks somewhat in supplemental mechanical practices. Farm No. 3 has used more supplementary mechanical safeguards in water disposal and has a higher percentage of row crops with a slightly weaker vegetative program.

The array of conservation ratings for the farms from which information was obtained might range from 30 to 95. The group called "conservation farms" might consist of those with ratings above 75, while those with ratings below 50 might be called "non-conservation farms." This division might be somewhat arbitrary depending on the distribution of ratings throughout the range.

Having established the classifications of farms, the next step would be to compare the current year's production for the two groups, including acreage and yield per acre of crops, number and production of livestock, farm expenses and income. The keeping of a farm business record book would provide more accurate data than a one-visit survey, but the use of the survey method has several

TABLE 1. ILLUSTRATIVE SCHEDULE OF VALUES FOR CALCULATING CONSERVATION RATING, AND APPLICATION OF RATING TO FOUR FARMS WITH ASSUMED CONSERVATION PERFORMANCE

Land treatment factors in 5-year period previous to year of measurement of results	Conservation performance[1]				Standard percentage points	Calculation of rating	Conservation rating			
	Farm 1	Farm 2	Farm 3	Farm 4			Farm 1	Farm 2	Farm 3	Farm 4
Frequently tilled land of Class IV, V, VI, and VII capability, percent of cropland	0	6	6	15	12	Subtract 1 point for each 3 percent of land used for crops which should be in permanent cover	12.0	10.0	10.0	7.0
Rotated grass-legumes, percent of cropland	3	40	25	20	20	Add 1 point for each 2 percent above 33 percent, subtract 1 point for each 2 percent below	20.0	23.5	16.0	13.5
Row crops, percent of cropland	33	25	40	50	15	Subtract 1 point for each 2 percent above 33 percent	15.0	15.0	12.5	6.5
Manure equivalent[2] per acre cropland per year, tons	3.0	4.0	2.5	1.5	10	Add 3 points per ton of manure equivalent[2] above 3 tons per crop acre, subtract 3 points per ton of manure equivalent below 3 tons per crop acre	10.0	13.0	8.5	5.5
Lime applied per acre of cropland per year, pounds	250	275	175	125	5	Subtract 1 point for each 50 pounds short of 250 pounds per acre per year	5.0	5.0	3.5	2.5
Cropland with protection of close-growing strips, percent	50	60	40	20	5	5×percent of acres protected by close-growing strips of proper width	2.5	3.0	2.0	1.0
Cropland bare or with insufficient winter cover, percent	10	10	20	30	5	Subtract 1 point for each 10 percent of cropland with bare or insufficient winter cover	4.0	4.0	3.0	2.0
Contour-tilled cropland, percent	100	40	100	0	15	15×percent of acreage tilled on contour	15.0	6.0	15.0	—
Cropland adequately terraced, percent	50	0	100	0	6	6×percent of acreage protected by adequate terraces	3.0	—	6.0	—
Essential drainageways well-maintained, percent	80	50	100	50	7	7×percent adequacy of waterways	5.6	3.5	7.0	3.5
Total					100	Total	92.1	83.0	83.5	41.5

[1] Farm 1—Excellent all around past record.
Farm 2—Excellent cropping record but needing supplemental mechanical practices.
Farm 3—Excellent on water disposal but needing stronger vegetative program.
Farm 4—Weak in all respects.

[2] A ton of manure equivalent considered equal to one ton of manure, 40 pounds of commercial plant nutrients or one-third acre of green cover crops added to soil.

other distinct advantages. It removes the handicap of being able to study only the operations of farmers who keep records. Moreover, a three-visit survey—(1) at the beginning of the year to take inventories and get background material; (2) in the middle of the year to get small grain and hay production, feed consumption, and purchases and sales to date; and (3) at the end of the year for final inventories and completion of the record—offsets most of the advantage in accuracy of the well-kept record book. If the same farms were visited for two or more years it would average two visits per year. This extra visit would also provide much information about farm operations which is necessary for later interpretation of the data. The farm record book usually lacks much of this necessary supplemental information.

The analysis would furnish quantitative differences between groups of farms in the use of conservation practices and help to answer the frequent query "What will it do to my income?" It would help to evaluate more accurately the assumed relative importance of specific conservation practices. It would point up some of the factors associated with the failure to use conservation practices, such as system of tenure, degree of indebtedness, and size of farm. In any event it should furnish locally adapted educational material in helping to hasten the application of conservation practices on farms.

Summary

The hazards of comparing farms at one point in time, with existing wide differences in soil characteristics, past conservation practices, size and type of farm are less than the difficulty of ruling out the effects of climatic and price variation which are inherent in the study of identical farms over a long period of time, provided care is exercised in grouping farms for comparability in the important variable characteristics.

To compare "conservation" and "non-conservation" farms it is necessary to classify them for soil comparability, size, and type of farm.

A conservation standard must be set up in terms of conservation practices and land uses in relation to a specified range of combination of soil resources.

The conservation standard for rating individual farms must consider more than one year's performance for most factors of land treatment.

The measurement of results of differences in use of conservation practices would be the current year's production, expenses and income. Within the area studied climate and price of cost and income factors would be assumed to be non-variable.

While it would be necessary to watch out for the biased influence of factors not related to conservation, this method would permit the study of a larger number of farms than the detailed cost record method, and allow for the effects of a larger proportion of unrelated factors to be averaged out.

The control of several of the variables such as proportions of kinds of soil resources, size and type of farm would reduce the number of farm records needed for significant comparisons and make the results more dependable.

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FARMERS REGIONAL PURCHASING COOPERATIVES LOOK TO RESEARCH

THE importance of research as a tool in helping to solve technical and business problems is becoming well recognized by many of the larger regional purchasing cooperatives. The growing tendency of many of these associations to manufacture or process a large share of the supplies they handle, their rapid growth, continued strides along technical lines in most branches of our economy, a growing complexity of interrelationships in the business world, and the tendency of competitors to adopt comprehensive research programs, all are factors that have contributed to a growing interest on the part of these cooperatives in the possibilities of research.

For the past few years some regional purchasing associations have maintained laboratories for conducting applied industrial research and for quality testing and control work. Within recent years they also have given increased attention to research along business lines. More recently such developments as (1) the ownership and operation of farms by the Eastern States Farmers' Exchange to conduct a wide variety of research; (2) the granting of $200,000 by the Cooperative G.L.F. Exchange, Inc., to the School of Nutrition of Cornell University; and (3) the establishment of research departments or the employment of full-time research per-

sonnel by the Cooperative G.L.F. Exchange, Inc., the Missouri Farmers Association of which the M.F.A. Milling Company is an important affiliate, Southern States Cooperative, Inc., and the Pennsylvania Farm Bureau Cooperative Association, Inc., are actions that have focused increased attention on the research activities of purchasing cooperatives.

The growing interest of private business concerns in research also is well known. About a decade ago the Bell Telephone Company employed a staff of 4,000 research workers and established a yearly research budget of $15,000,000. Similarly, such firms as Du Pont, Standard Oil of New Jersey, General Electric, and General Motors, to mention only a few, have given very significant attention to research. Of definite interest to regional purchasing cooperatives is the fact that private feed companies, fertilizer concerns, oil refineries, and farm machinery manufacturers have developed extensive research programs. The best estimates available indicate that industry employed around 100,000 trained persons and had a yearly expenditure of nearly a half billion dollars annually for research in 1940. It was recently reported that the Office of Scientific Research Development, created by Executive Order to promote war research, when considering obligations still to mature, would spend $473,000,000 for wartime investigations. Numerous research foundations and private and professional research agencies also have made their influence felt in research activities.

Hunches and Personal Opinions Will No Longer Do

The many problems confronting regional purchasing cooperatives, whether the consequence of greater business maturity, wartime conditions, or the necessity of undertaking adjustments to a peace-time economy will require careful attention if sound policy is to serve as the basis for effective operating practices—practices that keep the wheels of an association turning smoothly. As conditions bring about a shift from a sellers' to a buyers' market the idea that "anything goes" will prove an illusion. This serves to emphasize the desirability of looking to research as a means of helping chart future plans and operations. In fact, the manager of one of the larger farmers regionals has referred to research as a "compass" for policy determination.

The likelihood that economic conditions in post-war years will again require the giving of increased attention to problems of oper-

ating efficiency suggests a growing need for reliance on research findings if stormy seas are to be avoided when charting the future course of regional purchasing cooperatives. As these associations have developed into large-scale business establishments, doing an annual business of millions of dollars and handling a wide variety of products, it becomes increasingly evident that management and directors cannot have at their fingertips information with which to do a competent job in policy determination. To act without availing themselves of information obtainable through research means that such actions are influenced by emotions, hunches, and personal opinions of individuals in policy making positions who, no matter how competent, have biases that should not be trusted in guiding the destinies of rapidly changing and fast growing business establishments. A questioning and critical inquiry into facts that pertain to problems confronting these associations and a recognition that research and capable management go hand-in-hand seem essential if sound operating programs are to be developed for the changing conditions that loom in the years ahead. It is becoming more and more evident that the achievement of basic objectives of economy, service, and quality by regional purchasing cooperatives will become increasingly dependent upon the establishment of an effective research program.

What's Ahead?

Many aspects of the establishment of a research program for regional cooperative purchasing associations, however, are still in a highly formative stage. Differences with respect to such matters as products handled and territory served, together with the relative newness of a research approach to solving business problems, leaves many questions regarding the establishment of a research program still to be answered. Some of these include:

1. Determining the future research needs of purchasing cooperatives.

2. Determining the kinds of research that might best be undertaken by an association itself and the kinds that lend themselves to cooperation with colleges of agriculture, agencies of the Federal Government, other cooperatives, private research agencies, and business concerns.

3. Evaluating such factors as methods of establishing and organizing a research staff, selection of personnel, research procedures

and necessary facilities and arrangements for enabling cooperatives to effectively conduct research.

4. Examining research procedures for the purpose of suggesting desirable techniques.

Problems of Research

To the extent that guesses and spot opinions are relegated to the background in the policy-making decisions of regional purchasing associations, research investigations by competent and experienced men will more and more be used in dealing with a wide variety of operating problems. Some of these problems include the following:

1. What ingredients should be used in manufacturing feed and fertilizer mixtures?

2. What processing methods or techniques contribute to improvement in quality and maintain or increase efficiency in feed and fertilizer manufacture?

3. What strains, sources, and production methods assure patrons of the most satisfactory seed and consequently offer increased opportunities for better crop production?

4. What specifications, standards, and grades do patrons desire and which ones give them the most for their money in the purchase of farm supplies, equipment, and machinery?

5. What developments in purchasing policy will help these associations best to serve patrons? Such matters as possible sources of supply; prices; purchasing methods; storage, inventories, and handling practices; and transportation problems: these are items that need careful consideration in any appraisal of purchasing policies.

6. What methods of distribution will result in most effective operation? Types of retail agencies or outlets best suited to prevailing conditions, the location of these agencies, transportation and delivery practices to put into operation, and the kinds of supplies to handle, all are important aspects to investigate in determining how a purchasing cooperative should distribute its supplies to farmers.

7. What should be the policies of these associations with respect to marketing farm products? This question cannot be effectively answered unless information is available which pertains to such problems as determination of the kinds of products that might be handled effectively, investigation of possibilities in alternative methods and agencies of marketing, and consideration of relative

marketing costs for various agencies and outlets. In addition to undertaking the marketing of farm products some associations have expanded their activities to include various services such as freezer locker operations, lime and paint spreading services, and machinery rental.

8. What changes in general operating policies with respect to such matters as organization structure, financial policies, operating methods, and personnel management would enable associations to improve service to patrons?

9. What specific economic conditions relating to economic trends and forecasts are of particular concern to purchasing associations? This involves measurement of economic forces, determining changes and trends in these forces, and evaluating them as they influence the day-to-day operations of an association.

Kinds of Research

Managers and directors of farmers regional purchasing cooperatives may find it helpful to make two classifications in their consideration of research. These are often referred to as industrial research and business research.

Industrial research. Of the problems previously listed, the first four refer specifically to industrial research. They pertain to the more technical aspects that are associated with the commodities, plants, and facilities needed to process various products handled by associations. Closely related to such problems as ingredients, formulas, and new processes for feed and fertilizer manufacturing; and strains, sources, and cultural methods for seed production are problems of determining grades and standards for quality control and testing of various farm supply items.

In general, purchasing regionals have limited their technical investigations to applied research. This has often taken the form of "pilot plant" operations or of trying supplies and equipment under actual farm conditions, either on patrons' farms or on facilities owned or rented by associations. For more basic research, the general practice frequently has been for associations to rely on the findings of established research agencies—often various departments of state colleges of agriculture or the business concerns furnishing them with products handled or used in processing.

As pressing industrial problems confronting purchasing cooperatives have come to the foreground some of these associations have from time to time supported fellowships or made grants to agri-

cultural colleges for the purpose of conducting specific research. Studies to determine the suitability of various vegetable proteins as a replacement for animal proteins during periods of wartime shortages serve as an example. Similarly, studies in the technical aspects of fertilizer manufacturing and in the development of standards for the selection of farm supplies and equipment have received consideration of the research divisions of these agencies because of encouragement and sponsorship by some purchasing cooperatives.

Business Research. While not as well established or of as long standing as industrial research, the field of business research has become of increasing importance. It generally has been recognized that laboratory work in the natural sciences along chemical, physical, or biological lines has an important place in the operation of most large business establishments—cooperative or private. However, it was only after the first World War, some 25 years ago, that any significant attention was given to the varied aspects of economic and social problems. In fact, it is only within the past 10 years that very considerable attention has been given to this general type of research by farm supply associations.

During this time, however, these investigations have expanded to include research along such lines as business planning, economic trends, organization structure, purchasing and distribution methods, business location, side-line enterprises, personnel and industrial relations, public relations, and legal considerations.

Experience has demonstrated that those establishments that have given careful consideration to problems of business research have come to recognize it as fully as important as industrial research. Attention has been called to the importance of business research by a leading business executive who recently stated, "... Applied science and technology have added immensely to our wealth, and I who have devoted my business life to tools of research, would be among the last to minimize that contribution; but I can think of no aggregate contribution that research in the physical sciences might have made during the last decade to equal that which an understanding and control of economic phenomena would have made."

For the most part, purchasing cooperatives have considered research as applying to technical aspects of industrial production. Many of these associations, however, are giving increased attention to possibilities in business research and indications are that considerable expansion will occur along these lines. In addition to

their own efforts in business research, some of these cooperatives have developed joint arrangements with other associations for conducting such work. In some instances they also have worked out arrangements for conducting research with such agencies as departments of agricultural economics of land grant colleges, the Cooperative Research and Service Division of the Farm Credit Administration, other Federal agencies, and private research establishments. Experience also has demonstrated that in actual practice many aspects of industrial and business research are closely related.

A Word of Caution

In general, it can be said that to no small degree the ability of farmers regional purchasing cooperatives to "keep young" will be determined by the amount of conscientious effort they give to the formulation of sound research programs. A word of caution, however, seems to be in order. Few people have the temperament, patience, and training to do an objective job of research. This emphasizes the fact that adequately trained and qualified personnel are particularly important in the establishment of a successful research program. It is unlikely that promoting a "bright young chap" up from the ranks will give such a staff the leadership it requires. The National Resources Planning Board recently reported, in a study of business research, that "the standard of research in various companies is directly related to the competency of its professional personnel." It is important that research should be recognized as a questioning process that through careful and critical inquiry to establish facts and principles seeks the correction, verification, and expansion of knowledge.

MARTIN A. ABRAHAMSEN

Farm Credit Administration

THE STRUCTURE AND FUNCTION OF AGRICULTURAL EXPORT TRADE IN THE EGYPTIAN ECONOMY[1]

THE bulk of Egypt's foreign trade is primarily agricultural raw materials, of which cotton is the most important. Egypt held a comparative advantage in the production of cotton, which was a

[1] Summary of a dissertation submitted in partial satisfaction of the requirements for the Degree of Doctor of Philosophy, University of California, 1944.

source of considerable returns from 1860 to 1921. However, the dependence on cotton as the main exportable crop transmitted to the Egyptian economy the marked instability characterizing world trade in the interwar period. Moreover, with the shift of market demand to cheap cotton varieties and with the expansion or cotton culture in new areas throughout the world, Egyptian long-staple cotton prices dropped to a level which reduced considerably the Egyptian national income.

The demand facing exporters of the largest component of Egyptian cotton "uppers" is inelastic for the latter years of the period under study (interwar period); and since the charges between the local and export markets are usually fixed, it may be inferred that the demand curve facing the Egyptian producer is even more inelastic. This inelastic demand may justify intervention in order to stabilize returns to growers. But the high elasticity of supply in the production of cotton in the new areas outside Egypt limits greatly the possible usefulness of such a policy. In addition, Egypt's exclusive dependence upon the foreign market for the disposition of her cotton crop would make such a policy, even if immediately expedient, disastrous in the long run.

Egypt's present specialization in cotton production must give way to a balanced economic setup if a better standard of living for the Egyptian masses is to be attained. In view of new world developments in nutrition and transportation, Egypt, by virtue of her physical environment and locational advantage, has become more economically suited to the production of several varieties of internationally needed foodstuffs. A shift to a wider range of production would make possible the rise of new processing industries capable of reducing underemployment of the agricultural population.

However, the development of such industries needs capital which, because of low incomes, cannot be raised locally except with extreme hardship to the Egyptian population. There is only one alternative, the resort to foreign credit. Foreign capital will benefit Egypt if she guards against repeating the financial mistakes of the past.

MOHAMMED ELSAID MOHAMMED

University of California

THE APPLICATION OF MOTION AND TIME STUDY TECHNIQUES TO CERTAIN AGRICULTURAL ENTERPRISES[1]

IT WAS the purpose of the research reported in this thesis to test the application of motion and time study or work simplification techniques to two agricultural enterprises, hog production and tomato picking. The researcher studied industrial motion and time research techniques, and those techniques which were considered to be applicable were used in the study of these two enterprises. The tomato picking work more nearly approaches the repetitive type of job common in industry than does the work of producing hogs. In fact, the work of these two enterprises represents the two general types of agricultural work, namely: repetitive jobs in which it appears practical to develop and teach the most effective method of doing the work, and the less repetitive work varying from farm to farm in which principles can be taught but details remain to be worked out by the individul farmer.

In the tomato picking study the research method used consisted of the following steps:

1. Detailed study was made of pickers of varying degrees of proficiency. Their methods were described and motion picture analysis was made of the way that they performed the job.

2. Factors contributing to efficiency were isolated and related to output and the percent of the worker's time spent in various elements in the job was determined. It was discovered, for example, that around 70% of the picker's time was spent in moving the fruit from the vine to the hamper and moving the empty hands back to the vine.

3. What appeared to be a most effective means of performing the various steps in the job was described and the resulting method tried out experimentally. It was discovered that if the picker followed four rules, he could take advantage of most of the effective methods used by good pickers.

4. The four rules for effective picking were taught by use of motion pictures and illustrated leaflets.

The procedure followed in studying the hog enterprise differed from the study of the tomato picking in that to produce hogs many

[1] Summary of a dissertation submitted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy, Purdue University, 1944.

different jobs must be studied over the period of an entire year. Five efficient hog producers were selected for detailed study and their methods were observed and timed through the course of a year. An attempt was made to determine the influence of such factors as field arrangement and cropping system, methods of performing jobs at farrowing, suckling, summer and winter feeding periods on efficiency and accomplishment. Management as well as work methods play an important part in efficiency in hog production. Therefore, it was necessary to take into consideration the quality of the job in order to measure effectiveness of work.

From the more or less descriptive and comparative study made on these farms, it was possible to develop eight general principles for doing the work of producing hogs most effectively. These principles are supported by the differences in accomplishment on farms studied and by the fact that they have been previously tested in industrial work. In contrast to the tomato picking, specific methods of doing individual jobs in connection with hog production were recommended in only a few cases. Alternative methods of feeding, watering, housing, arranging fields, laying out farrowing lots and using various complements of equipment were described and compared in terms of cost, labor requirements, and effectiveness of work. Which method would be most desirable for the farmer is left up to him. The results of this study will be released in bulletins and leaflets as well as in motion pictures.

As one of the purposes of this study was to determine the usefulness of motion and time study techniques in simplifying farm work, the following conclusions are of some importance. It appears that the detailed techniques of motion and time study may be applied directly to such agricultural jobs as tomato harvesting. In such tasks as this the study of details is important. A fraction of a second saved a thousand or more times a day accumulates to a substantial total in such repetitive jobs. Unlike hog production, labor is a major part of the cost of tomato harvest. Hence, it may be practical to increase other items of cost if the amount of labor can be decreased accordingly. Motion economy principles for effective use of the human body apply to the physical work of tomato picking and other hand harvest work in much the same manner as they apply to industrial jobs.

In contrast to tomato picking, specifications for doing the work of the hog enterprise on all farms cannot be developed, except for

certain jobs which are performed repeatedly under similar conditions. In such non-repetitive work as the hog enterprise, more can be accomplished by studying broad processes than by studying the details of body movements. Labor is a small proportion of the cost of pork production, but much of this labor is highly skilled. Therefore, the effectiveness of the work and not the minimizing of time and energy is the proper measure of success. Work simplification studies of such enterprises as this must necessarily include studies of various management practices, as they influence time, labor, costs and accomplishment.

At the onset of this study it was assumed that agricultural and industrial work are sufficiently alike that industrial motion and time study principles could be used in agriculture. Studies of the two enterprises reported above verify this hypothesis. However, the less repetitive the job becomes, the greater the adaptations that must be made of industrial work simplification research techniques. These studies and others which are now in progress at other institutions have merely scratched the surface with respect to the accomplishment which can be made in this area.

JOHN W. OBERHOLTZER

Purdue University

THE EVAPORATED MILK INDUSTRY UNDER FEDERAL MARKETING AGREEMENTS[1]

THE evaporated milk industry was started on a commercial scale in the United States in 1885, and has developed into a nationwide industry with processing plants in 29 states in 1944. It has become increasingly important to dairy farmers as an outlet for raw milk. Evaporated milk has grown in importance to consumers as a cheap and acceptable form of milk. During the First and Second World Wars the production of evaporated milk increased tremendously to meet war needs and for export. The decline in demand for evaporated milk after the First World War created a problem of adjustment for the industry. A decline in demand after the present war is likely to cause a serious problem for producers and the industry again.

In the period following 1929, the price of raw milk used in making evaporated milkand the price of evaporated milk declined severely.

[1] Summary of a dissertation submitted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy, University of Wisconsin, 1944.

Competition among the manufacturers in the sale of evaporated milk took the form commonly called "cut-throat competition." Secret rebates and concessions to purchasers were often made. Early in 1933, farmers in Wisconsin were threatening to withhold milk from the evaporated milk plants unless higher prices for raw milk were obtained.

These conditions brought a request for government regulation. The firms manufacturing about 95 percent of the evaporated milk in the United States entered into a marketing agreement with the Secretary of Agriculture under the terms of the Agricultural Adjustment Act of 1933. The main objective was to increase returns to producers of raw milk sold to evaporated milk plants. In this agreement there were three major provisions. First, the manufacturers agreed to pay producers of raw milk not less than a specified minimum price. For purposes of determining this minimum price the United States was divided into six sections with a formula based on the prices of butter and cheese, or butter, for each section. Second, the manufacturers agreed not to sell evaporated milk for less than a specified minimum price and for not more than a specified maximum price. Third, the manufacturers agreed to observe certain trade practices designed to eliminate the secret concessions and other abuses which had developed in the industry.

This Agreement No. 7 remained in effect from September 8, 1933 to May 31, 1935, when it was replaced by Agreement No. 60 and License No. 100. The major complaints against Agreement No. 7 were that competition from nonsigners made it impossible for the parties to the agreement to observe its regulations and that the minimum price provision for the finished product was harmful to the firms selling unadvertised evaporated milk. Agreement No. 60 continued most of the regulations of Agreement No. 7 except that a price filing system was substituted for a fixed minimum and maximum resale price provision. License No. 100 contained the same regulatory provisions as Agreement No. 60, but all firms manufacturing evaporated milk were required to observe its provisions. Agreement No. 60 and License No. 100 are still in effect.

The minimum price formulas of both Agreements No. 7 and 60 were too low in four out of the six sections to have any significant influence on the price paid producers for raw milk, since the actual price paid for milk exceeded the minimum price in nearly all instances. In the other two sections the actual price paid was equal to

or slightly above the formula price from 1933 to 1941 and it appears that producers in these two sections benefited somewhat through higher prices from these agreements. Since 1941, the actual price has been considerably above the minimum price in all sections.

In the regulation of the manufacturers' selling prices for evaporated milk the conflict between the manufacturers who sell advertised brands and those who sell unadvertised evaporated milk has created the main problem. The manufacturers selling unadvertised milk complained that the fixing of a minimum price for evaporated milk favored the firms selling advertised brands of evaporated milk since the unadvertised milk was not permitted to compete freely on a price basis. The data on the sales by the firms selling unadvertised milk indicate that the percentage of sales made by them declined somewhat during the period when minimum resale prices for evaporated milk were in effect, but this decline was not halted when price filing was substituted for fixed prices. Under the price filing system, the incentive to price cutting to obtain increased sales is largely removed since the filed price is made known to all manufacturers. Price changes on the part of manufacturers have been made almost simultaneously under the latter agreement and license.

The regulation of trade practices has tended to make sale practices and the channels of distribution more rigid. Both the regulation of trade practices and the price filing system have tended to stabilize the shares of sales obtained by each of the various groups in the industry.

The administration of these agreements by industry committees did not appear to work well and it is suggested that arrangements be made under which administration be placed directly under a governmental agent or authority and the industry committees serve only in an advisory capacity.

Under these Agreements production and consumption of evaporated milk continued the upward trend started shortly after the First World War. The margin between the producer and the consumer became smaller during the period of regulation up to 1941, but this was entirely due to a decline in the margin between the wholesaler and the consumer. The margins taken by the manufacturers actually increased.

Both of these Agreements were based on the theory that producer prices were low because of the competitive practices of the manu-

facturers. It was believed that if competition among manufacturers was regulated, they would pass on the benefits derived from this regulation to producers. This theory is untenable since the producer price is based on the demand for dairy products and the supply of raw milk. If manufacturers of evaporated milk through regulation increase their returns, there is no reason for them to pass this on to producers except as competitive conditions make it necessary. Likewise, if manufacturers incur losses they cannot pass these losses back to producers where the latter have good alternative outlets for their milk.

There may be need for the regulation of producer prices after the war, but if this is the case such regulation should apply directly to producer prices. The Agricultural Marketing Agreement Act provides the basis for such regulation and the experience gained under these marketing agreements should provide helpful information in the framing of new regulation.

BURTON A. BAKER

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CONNECTICUT'S RESEARCH IN MILK MARKETING: ANOTHER OPINION

I FIND myself in disagreement with my friend and colleague, Leon Steck.

In the preceding issue of THE JOURNAL, Mr. Steck reviewed a number of studies made by the University of Connecticut under the general title, "Efficiency of Milk Marketing in Connecticut." He questioned whether these studies made "a constructive and meaningful contribution toward an effective means of bringing about a lower price of milk to consumers, or higher prices to farmers, or toward the establishment of a sound social policy with respect to the milk industry."

Mr. Steck was careful to state that this was his own personal judgment. My own personal judgment is quite different. I believe the Connecticut studies represent the most significant and important research in milk marketing done in recent years either by the State colleges or by the Federal Government. To show why my opinion is different from Mr. Steck's, I should like to comment briefly on each of his three main criticisms.

The first criticism is that many of the proposed adjustments growing out of these studies would require an increase in the size of firms; that savings from such adjustments would be possible only if there were economies of scale; and that it is well known that such economies of scale disappear or become diseconomies when the firm is larger than the optimum size. This is true, of course, but I think it has been recognized fully in the Connecticut studies and in the other studies made under the general supervision of the New England Research Council on Marketing and Food Supply. These studies have clearly indicated certain diseconomies that result from large-scale operations in dairy marketing. For example, they have shown that as a milk receiving plant becomes larger it incurs higher costs for collecting milk from a larger producing area. But it is also shown that diseconomies of this kind are, in many cases, more than offset by real economies in the milk plants. In spite of any theoretical argument about economies and diseconomies of scale, the Connecticut studies have shown beyond doubt that consolidation into larger units would, in many cases, make important net savings.

Second, Mr. Steck feels that some of the proposed reorganization measures would involve too much regimentation of consumers. For example, by compelling them to accept every-other-day delivery of milk instead of daily delivery. I certainly agree with Mr. Steck that consumers should be permitted to obtain such services as they want. Yet I believe a good many consumers would like to get milk at a lower price. We should find some way of giving them an opportunity to have milk delivered every other day if they choose; or to buy milk in stores and carry it home if they choose; and we should try to organize the marketing system in such a way that they may have a good opportunity to make these choices felt. The Connecticut studies have shown several ways of lowering the retail price of milk. These savings should not be forced upon unwilling consumers, but the University has done a real service in pointing out what can be done. Have not consumers (or voters) a right to know this?

Third, Mr. Steck's principal objection to the Connecticut studies seems to be that he fears that the proposed changes in milk marketing would establish a substantial degree of monopoly control. He is quite correct that the assignment of exclusive zones to individual distributors, the establishment of a single central plant, and the granting of exclusive trucking rights in milk collection would be

essentially monopolistic elements. But the milk marketing system is all shot through with monopolistic elements. Not only do a few large distributors and large cooperatives control substantial percentages of the supply in many local milk markets, but also the milk marketing programs of the municipal, State and Federal Governments are used to fix the milk prices and to limit competition. The monopolistic elements already exist. The real problem is whether to eliminate them, or whether to use public controls to get public benefits.

Perhaps Mr. Steck may be right that there are still great opportunities "in the creation of conditions which are favorable to, and which would encourage, price competition among milk distributors." But if we are to study possible ways of reviewing price competition we shall need more than research on the use of paper containers in the place of glass containers. I assume that Mr. Steck would also favor the consideration of opening up milk sheds that are now restricted by arbitrary inspection procedures, of eliminating discriminatory oleomargarine taxes, by abolishing milk price controls, of discontinuing milk marketing agreements and orders, and of similar methods of relaxing or abandoning local, State, nad Federal milk controls. However, as long as we have these controls I believe we should give very serious consideration to the possibility of using them to bring about efficient marketing and distribution for the benefit of both the farmer and the consumer.

In conclusion, I feel that the University of Connecticut should be commended for doing a thorough job on a very important question of public policy. I hope this research will be pushed and will be broadened to include a study of possible savings in the marketing and distribution of other commodities. The research people should keep everlastingly at this job. Efficiency in marketing must be one of our main objectives, whether this is accomplished by Government controls, by industry controls, or by the process of competition.

FREDERICK V. WAUGH

War Food Administration

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Soule, George; Efron, David; and Ness, Norman T., Latin America in the Future World. New York: Farrar and Rinehart, Inc., 1945. Pp. XIII, 372. $3.50.

REVIEWS

The Farmer and the Rest of Us, Arthur Moore. Boston: Atlantic–Little, Brown & Co., 1945. Pp. 226, $2.50.

Two years ago the *Atlantic Monthly* carried an article entitled "Why Farmers Fear the Peace." Soon a second followed. Those of us from the corn belt heard and felt our neighbors speak in these essays. The voice was genuine and the pen was Arthur Moore's—editor of the Bloomington, Illinois *Pantagraph*. These essays showed clearly that Moore was filling a real gap in the serious or intellectual magazine field as an interpreter of the midwest farmer viewpoint. Now Moore has expanded his ideas into a book, written at the insistence of Atlantic—according to an editorial comment on a recent article "Saving the Soil," which consists of excerpts from the present book.

During the last ten years Moore has been seeing great events work through the lives of his farmer friends and readers—first the New Deal farm programs, and then the war, with the need for food, the revolution in nutrition, the politics of price control, subsidies and all the rest. In this book we have an interpretation of these recent events in the context of both history and public policy. Moore is searching for an understanding of the place of farming in modern life and for a new philosophy of farming that makes sense in an industrial age. The result is a most stimulating book—always a courageous report of events, frequently a brilliant analysis of crucial issues.

Moore sees that the future of farming and public policy alike turn on what social scientists in the land grant colleges do. Technology cannot save agriculture in an industrial age; only fearless social scientists and an adequate agrarian philosophy can do this. He says that social scientists in agricultural colleges have not risen to the needs of the times; we have not achieved intellectual leadership in our fields comparable to that of physical scientists. Moore is critical but not hopeless, even though he believes land grant college social scientists have allowed pressure group spokesmen to lead and instruct the farmers in price policy, the relations of farmers and organized labor and similar issues.

Many passages in the book flash a witty or brilliant penetration that can come only from persistent study. I note a few. "Urban liberals who become alarmed over the social structure of corn belt

agriculture forget that there is a difference between democratic conservatives and class-conscious reactionaries" (p. 94). Corn-belt farming is still classless. "No matter what farm leaders may think, they apparently believe the quickest way to increase membership is to promise to knock a couple of labor leaders' heads together" (p. 106). The corn belt farmer's "political character is shaped by Marshall silt loam and thirty inches of rain" (p. 129).

Moore concludes that the Farm Bureau fight against the Farm Security Administration was a combination of southern planters' apprehension and corn belt apathy. This observation is shrewd and would undoubtedly be supported by extensive research. In Moore's words, "It was the 'ol' massa' mentality of the South that was frightened and maddened by the FSA and it was allowed to determine the policy of the Farm Bureau's national lobby" (p. 97). However, Moore later observes that political leadership in this country has too short a tether to undertake the collective farming experiments of the FSA.

Altogether this is an important book, not because it is a brilliant finished analysis—which it is not—but because it offers so much fundamental insight into what corn belt farmers do and think. Here are raw materials for agricultural policy.

It does not detract from the value of the book to note that there are many seemingly inconsistent and inconclusive statements in it. The treatment of tenancy is a case in point. He touches many "faces" of tenancy, arriving at no definite conclusion about it—but he does observe dramatically that he has never yet found a tenant really satisfied with tenancy as a way of farming. Moore is searching for comprehensive foundations upon which to judge tenancy; but these grounds have not yet been worked out by the craft of agricultural economists. But it is implicit in Moore's statement that he knows we cannot pass adequate judgment on tenancy merely by analyzing a farm operating statement. In many places in the book, Moore is handicapped by the limitations imposed by the present state of agricultural economics. We simply haven't worked through many of the general problems of concern to the author.

The central theme running through the book, and through his earlier essays in the *Atlantic Monthly* as well, is the search for a national food policy. In one of his *Atlantic Monthly* essays Moore boldly declared that a policy for an industrial agrarianism "would be a farm policy to assure a continuous supply of nutritious food

raised by a relatively few specialists so that the rest of the working force could be in factories." He no longer holds to so simple a view, but rather sets up a fourfold criterion of public policy and a rural philosophy for our times: the strengthening of the family farm; the resolution of group strife, particularly between farmers and laborers; soil conservation through a satisfactory rural life; and adequate nutrition for all. But the core of his thought and hope still centers on the possibilities of finding common ground for all interest groups in policies and programs aimed at providing an adequate and permanent food supply.

This faith is in keeping with the temper of the times; indeed there is so much recent enthusiasm for "food" as a weapon of war and peace that many are surely headed for disillusionment. Anyone who will compare the early war slogan, "Food will win the war and write the peace" with the present state of international negotiations—the San Francisco conference, the veto power on the security council, French and British differences in Syria—can see what is meant. Food or nutritional goals simply cannot be the immediate ends of public policy in a world where interest groups are powerful; it is the difference between an ultimate end and an end in view. The economist's preoccupation with the conditions of equilibrium blind him to the second—the ends in view; but these procedures are also ends. And Mr. Moore senses this, especially in some of his remarks on the recent ill feeling between farmers and organized laborers.

Any reader of this book must surely finish it with a sense of gratitude for an earnest job well done. The great values to me are to be found (1) in the acute sense of awareness which Mr. Moore has of issues and meanings for farm people; and (2) in the challenges to agricultural economists to deal with this general order of problems. Now that Mr. Moore is leaving Bloomington for an editorial position with the *Prairie Farmer*, this paper will take on a deeper significance to students of agricultural economics.

K. H. PARSONS

University of Wisconsin

Food for the World, Theodore W. Schultz, Editor. Chicago: University of Chicago Press, 1945. Pp. xiv, 353. $3.75.

This book gathers under one cover essays by a galaxy of stars in the fields of population, human nutrition, international trade and relations, and agricultural economics and policy—Frank G.

Boudreau, John D. Black, Frank W. Notestein, Frank Lorimer, C. A. Elvehjem, L. A. Maynard, Paul R. Cannon, Ancel Keys, Lydia J. Roberts, Karl Brandt, Walter W. Wilcox, Howard R. Tolley, P. Lamartine Yates, Margaret G. Reid, E. W. Gaumnitz, Percy W. Bidwell, Edward S. Mason, Leroy D. Stinebower, Paul H. Appleby, Allan G. B. Fisher, Henry C. Taylor, and Theodore W. Schultz.

The 23 separate papers were presented at the Twentieth Institute of the Norman Wait Harris Foundation, University of Chicago, September 4–8, 1944. They are arranged in six groups: The Food Movement; Population; Nutrition; Food Supplies; International Relations; and Consequences and Policy. Each group is followed by brief but illuminating observations of participants. An introduction is supplied by Dr. Schultz, editor of the volume. Here he poses the questions and problems considered at the conference. As editor and selector of participants, Dr. Schultz deserves the thanks of all who are interested in or directly concerned with the broad problems of improvement of human nutrition throughout the world or within nations, of prospective movements and levels of national and international prices of agricultural products and the supply-demand factors likely to affect them, and of formulation and implementation of national and international agricultural and trading policies. On these large matters no book familiar to the reviewer provides a wider range of thoughful and thought-provoking analysis, or a more stimulating collection of informed opinion.

The general subject matter of these excellent essays may be stated as follows: Given the broad facts (a) that the nutritional status of populations is much higher in some nations of the world than in others, (b) that nutritional status within any nation is much higher in some classes of the population than in others, and (c) that in some countries agricultural surpluses threatening to levels of farm prices and income seem likely to emerge (or persist) in postwar years while in others low-level consumption of food seems equally in prospect—what can be done by governmental action, national or international, at once to elevate the level of nutrition in unadvantaged nations or groups within nations and to safeguard income levels of producers in surplus areas?

Clear-cut answers to problems of such magnitude could hardly

be expected to emerge. On one matter there appears to be agreement, implied rather than expressed, among all the participants: governmental intervention of some kind and degree is more likely to move in the direction of solution than is the absence of governmental intervention. Beyond this, there appears to be general recognition, if somewhat reluctant in some quarters, that the dominant cause of low nutritional status of populations is lack of income—poverty more than ignorance or preference—and that, accordingly, the most significant (though not the only) measures for improvement of nutritional status must contemplate elevation of incomes.

How such elevation of incomes is to be brought about, however, constitutes an area of disagreement and uncertainty. Nationally, with respect to the United States, several participants seem to favor subsidization of food consumption domestically on the model of the food-stamp plan, the school-lunch program, and the in-plant-feeding program. Others would regard "full employment" (without specifying how to secure it or its continuity) as the more appropriate approach. On the international side, it is generally believed that freeing international trade from the bondage of tariffs and quotas would be desirable in the highest degree, as would industrialization of relatively less-advanced countries implemented either by foreign borrowings or domestic savings of capital; but few participants seem to anticipate rapid and general reduction of trade barriers, or to expect that industrialization is likely to proceed at the desired pace; and some appear to feel that freedom of trade might advantageously be modified in favor of international commodity agreements. Some contemplate with equanimity both the creation of an international two-price or multiple-price system for agricultural products, linking price support and production curtailment in surplus areas with subsidization of consumption in needy areas abroad; others would view the adoption of such policies with scepticism or alarm. No panacea, no magic formula, no blueprint for action is brought forward. What the reader gains, indeed, is a sobering conviction that the task of planned improvement of nutritional status, whether within or between nations, whether approached by specific attention to unadvantaged groups or nations or by general attention to whole populations and world trade, is almost appall-

ingly difficult. Not the least among the difficulties is that of bringing into being the necessary quantum of international collaboration.

Food and agricultural policy in the United States occupies, quite naturally, a large fraction of the participants' attention. It is refreshing here to find several forthright suggestions that policy based upon the price-parity concept is "tending to price us out of the world market" (Tolley, p. 199), and is even "a liability to agriculture's own interest" (Schultz, p. 201). A neglected alternative involving free movement of market prices combined with payments to farmers is mentioned (Brandt, p. 146; Schultz, p. 201) but not thoroughly explored. It is to be hoped that this alternative will be expounded more fully in the near future.

Opinions of readers will differ regarding the relative excellence of the papers; much will depend upon what one seeks. The reviewer is especially grateful for Notestein's "Population—The Long View"; Maynard's "Knowns and Unknowns about What Constitutes an Adequate Diet"; Brandt's "The Marriage of Nutrition and Agriculture"; Yates' "Food and Income"; Bidwell's "Postwar Trade Policy"; Mason's "The Future of Commodity Agreements"; Stinebower's "Food as a Facet in International Trade"; Schultz's "Food and Agriculture in a Developlng Economy"; Brandt's "Basic Elements of an International Food Policy";—and the observations of participants.

Time and again one senses, especially in these "observations," a basic clash of opinion or (perhaps) temperament. The gap is wide between Brandt's "the Good Society's criterion for all policies must remain how much freedom it can combine with the inevitable minimum of regimentation and controls" (p. 340) and Black's "If a congressman had been present at these meetings throughout—an earnest, sincere, well-intentioned congressman—who had had to go back to Washington to draft some legislation after the first of January in order to accomplish and achieve desirable ends, he would have felt he had not received much help" (p. 341). This is, of course, a familiar but none the less important divergence of views on approaches to policy; cold logic may never resolve it. Fortunately, however, the various participants rarely go so far in either direction as Elvehjem's "We probably should starve humans into eating the right foods" (p. 118).

MERRILL K. BENNETT

Food Research Institute

Recent Trends in the Demand for American Cotton, by Cyril O'Donnell. Chicago: University of Chicago Press, 1945. Pp. 53 plus 28 pages of tables, $1.00.

This booklet is the most complete study of the demand for cotton yet published. It certainly deserves to be read by every thoughtful student of cotton and the cotton industry.

The study is divided into seven chapters, though the last one, Notes on the Technology of Rayon Manufacture, hardly deserves to be considered a chapter.

From Chapter I, Changes in the Total Demand for American Cotton, conclusions are drawn that the outlook for cotton is dark, especially in the matter of regaining foreign markets, that there is a growing inelasticity in the demand for cotton, that the price of cotton is affected less and less by the quantity consumed, and that producers are in the position where total income will decline when the crop size increases. These conclusions are based on highly artificial conditions in both production and price, and do not agree with more general conclusions in Chapter VI.

Chapter II, Trends in the Competition of Other Fibers with Cotton in the Production of Ultimate Consumers Goods, discusses the consumption for some major kinds of cotton goods, gives some general factors affecting consumer choice of different textile materials, such as style, durability, and washability. These are easy to discuss, but difficult to translate into quantitative data. A few cases, such as hosiery, the one used by the author, can be found where style and appearance take cotton out of the running. On the other hand, there are other lines, such as men's shirts, in which cotton has both the desired styling, qualities, and appearance. The point is, that it is impossible to judge the whole field of consumer demands of thousands of uses for cotton by a few cases not especially important in themselves.

Chapter III, Industrial Uses of Cotton, points out the very keen competition of other textile products and paper with cotton, but shows that business conditions, more than anything else, determine volume of demand for, and uses.

The Foreign Market for American Cotton is analyzed and discussed in Chapter IV. Some valuable data are assembled which show the spreading of the market for U. S. cotton to new countries as well as substantial losses of volume of sales to a number of our best customers.

The explanations for these losses and shifts are good, but are far from complete, including Chapter V, The Effect of Governmental Policy on the Demand for American Cotton. The effects of the U. S. Government's policies of controlling production and pegging prices on increasing foreign production, and in causing foreign consumers to shift to the new producers, are dealt with more fully in Chapter VI, but nowhere adequately explained.

The outlook for the demand for cotton in the eyes of the author is contingent on many "ifs." If we win the war, which is now assured, and if we win the peace such as expressed in the Atlantic Charter, we can look forward to a demand of 7 million bale export market. The size of the domestic market will be governed by the competition of other fibers, especially synthetics, and by success in raising buying power of low income groups or lowering costs of goods to their level.

The author traces the effects of the Government's efforts to solve the low income problem of the cotton growers, and points out the difficulties of attempts to take such relief out of the market by restricting production and extending above-market-price non-recourse loans to cooperating cotton growers to raise prices. This sort of agricultural policy affects adversely the demand for American cotton in three ways: (1) it invites and encourages foreign production of cotton which has contributed greatly to the loss of our foreign markets, (2) it raises the domestic price of cotton, which causes substitution of synthetic fibers for cotton and (3) it tends to kill much of the demand of low income groups.

Unfortunately the author did not follow through and suggest a full-fledged constructive policy to deal effectively with the cotton problem as regards demand. The need for reduction of our tariff was suggested, and the value of a strong program of research to find new uses for cotton were suggested as important remedies. These are good so far as they go, but the most powerful menace to the overall demand for American cotton is the above-market-price non-recourse loan to farmers.

The most important weaknesses in this study are inadequate treatment and proper evaluation of the nature and influence of the effects of prices and U. S. policies on the demand. The possibilities of lowering costs of cotton production through mechanization and other means as more effective ways for expanding markets for

cotton both at home and abroad need to be more thoroughly developed.

University of Texas A. B. Cox

Wheat in the World Economy: A Guide to Wheat Studies, J. S. Davis, Helen M. Gibbs and Elizabeth B. Taylor. Stanford University California: Food Research Institute, 1945. Pp. 222. $2.00.

World Grain Review and Outlook, 1945, Helen C. Farnsworth and V. P. Timoshenko. Stanford University California: Food Research Institute, 1945. Pp. 306. $3.00.

The first number of the well known series of Wheat Studies appeared in December, 1924. The series was terminated with the publication of the issue, Vol. XX, No. 6 in July, 1944. These studies represent the work of various individuals who have given wheat, in practically all of its economic aspects, both national and international, a very searching analysis, far beyond that which has been applied to any other commodity. They contain a wealth of valuable information including statistical data not compiled or available elsewhere, and analytical procedures. In consequence, the respective numbers have proven to be and will continue to be outstanding references, not only for those primarily interested in wheat but also for those concerned with economic problems connected with other commodities and related problems of public policy.

In order to facilitate the use of the 180 numbers, there has been prepared A Guide to Wheat Studies. The arrangement and completeness of this volume are such that it will prove invaluable to the users of Wheat Studies. It will also serve to introduce the series to those who have not previously used it. The volume is divided into three sections. Part I consists of abstracts of all issues except the *Wheat Survey* numbers. Part II presents a complete chronological list of individual numbers; a list of *Special Studies* classified by author; and a similar list classified by type of subject. Part III is a composite index to the contents of every issue of Wheat Studies.

World Grain Review and Outlook is the first issue of an entirely new publication of The Food Research Institute, and replaces in part certain features of Wheat Studies, but also containing many

new features and a broader coverage of the world's leading cereal crops. While wheat receives the greater emphasis because of its importance as a human food and as a product of international trade, it is viewed in the perspective of other grains and their uses.

The volume consists of four sections. Part I, "Food Grains in 1943–44" begins with a perspective of important food grain developments of the past fifteen years. The second chapter reviews the outstanding features of the crop year and the nine remaining chapters of this section deal with the supply, trade, utilization and price aspects in the more important countries of the world. Part II "Feed Grains in 1943–44," consisting of four chapters, analyzes the feed grain situation with particular reference to the United States, Canada and Australia. The "Grain Outlook for 1944–45 and Later Years" is the title of Part III. This section which consists of six chapters is concerned with world developments and outlook; the current and future situation in the United States, as regards supplies, requirements, trade and prices; supplies and prospective exports of the main exporting countries; and the prospective requirements including relief needs of European countries. The final chapter in this section is devoted to an analysis of grain policies and world trade; the effect of subsidies, export bounties, import quotas, and other types of trade restrictions; and finally the postwar prospects of world trade. Part IV consists of a statistical appendix prepared by Rosamond H. Pierce and represents a careful compilation of useful data.

This new publication continues the par excellence of Wheat Studies. In view of its greater coverage and complexity, the book is outstanding in the careful delineation and coordination of so much valuable statistical material and in building up a comprehensive and integrated view of the world wide grain situation.

REX W. COX

University of Minnesota

America's Role in the World Economy, Alvin H. Hansen. New York: W. W. Norton & Company, Inc., 1945. Pp. 197. $2.50.

The thesis of this book is that "world prosperity and world stability depend in no small measure upon (a) the achievement of full employment within the United States, and (b) the active and wholehearted cooperation of the United States in the formation

and development of international economic organizations designed to insure the workability of a new world order" (p. 8).

Those charged with working out the techniques of our international cooperation for post-World-War-II have had a persistent addiction for the one-at-a-time method. This is not surprising. After the last war the entire peace settlement was pretty much wrapped up in one package and presented to the United States Senate. The results were not of the reassuring kind that would encourage a repeat performance, and there has been considerable feeling that the difficulty after World War I grew out of the fact that the accumulated objections to particular parts of the program were more than enough to defeat the whole thing.

This mistake at least is not being repeated. We have this time a Bretton Woods proposal, a proposal for participation in a relief program (UNRRA), a Food and Agricultural Organization, a political security organization, and others such as those proposed for commercial policy, cartels, and commodity purchases. In addition to these are some like the International Labor Organization which grew out of the last war.

By presenting these one at a time the area of objection can undoubtedly be minimized (although the profound change in the temperament of public opinion is perhaps a more significant advantage). But this technique has the weakness that it leaves the ordinary citizen a bit bewildered about what these special-purpose organizations are supposed to do and how they fit together. In separate chapters on these various proposals Professor Hansen does a much-needed job of explaining and analyzing their functions. And of primary importance—it is pitched at a level which can be readily understood by a nontechnical reader.

The book does not consider explicitly the problem of fitting these proposed institutions together and the related one of how their activities, once the organizations are in operation, are to be coordinated. This is of considerable importance if contradictory policies are to be avoided and jurisdictional conflicts held to a minimum. One is tempted to suggest that this may be one of the more difficult problems in the current program of international cooperation as it is now taking shape, and a few words from Professor Hansen's skillful pen would have been most welcome on this subject.

There are several excellent chapters also on the broader economic problems involved in our international economic cooperation. Those who fear that American businesses are too high-cost to compete for foreign markets will be somewhat reassured by the very clear analysis in chapter XV, "Can the United States Compete in World Markets?" As Professor Hansen states, our problem has been that we have competed too well and sold too much (relative to our ability to buy from abroad).

One critical note might be ventured on the chapters dealing with the Bretton Woods Monetary Fund (about which thus far most of the public criticisms have been centered). Our problem now is to find a practicable area of agreement on this subject which will be broad enough to elicit support from substantially all economic groups. The book may conceivably be written in such a positive tone that the proponents become more enthusiastic and the opponents more skeptical. A somewhat more objective (and even occasionally critical) point of view may be more effective in marshaling public understanding and support (as the reception which the CED report on this subject received from all quarters would indicate) as one which is too anxious to meet categorically every objection.

PAUL W. MCCRACKEN

Minneapolis

The Economics of Peace, Kenneth E. Boulding. New York: Prentice-Hall, Inc., 1945. Pp. 278. $3.75.

In this book Professor Boulding has undertaken the task—to paraphrase a portion of the preface—of being an "intellectual middleman" who can assist in the distribution of new ideas beyond the circle of professional economists. While there may be considerable disagreement among economists with regard to the particular ideas selected by the author for discussion there can be little doubt that he has performed his task as a middleman with distinction. In fact, by combining these ideas with a particular philosophical and social point of view, the author has done much more than is usually expected of a middleman.

The first third of the book is devoted to a discussion of the physical and financial problems involved in the reconstruction of devastated areas. Of particular interest to agricultural economists are the sections dealing with the means that might be used to

restore trade between the urban and rural portions of devastated areas. Boulding suggests, for example, that the shipment of fertilizers, feedstuffs, and farm equipment to wartorn countries "would not only assist the food situation in the following years and so speed recovery but [by inducing farmers to sell their produce] would actually help the food situation at the time of shipment!"

The latter two-thirds of the book is concerned with the "broad problem of human progress—especially economic progress—viewed not merely as a matter of restoring certain devastated areas to a prewar level of productivity, but as a problem of raising the productivity of mankind as a whole." Among the topics discussed in this section are: (1) the institutional framework within which we might expect the optimum amount of economic progress, (2) the extent to which the Government should alter the distribution of incomes resulting from production under capitalist institutions, (3) the causes of and remedies for unemployment in technically advanced areas, and (4) the restoration of foreign trade. The author also discusses what he terms, "Right Wing Illusions" and "Left Wing Illusions," i.e., arguments which, because of their wide acceptance, may be said to govern the responses of a large portion of the community to social problems. Finally, in the last chapter, entitled, "An Appendix on Politics and Morals," Professor Boulding discusses the problems involved in the elimination of war as well as those involved in the maintenance of a Government responsible to the nation as a whole rather than to special interest groups.

The portion of the book dealing with the causes of and remedies for unemployment is likely to be the subject of considerable controversy and it is unfortunate, in the reviewer's opinion, that the reader is left to his own devices for much of the underlying analysis. Professor Boulding argues, for example, that the stock of capital goods cannot grow forever and is indeed approaching its maximum size in the technically more advanced nations. Why? The owners of capital goods are said to prefer holding money balances to capital goods; every attempt to produce capital goods leads, therefore, to a fall in their price. This appears to the reviewer as a particularly weak reed on which to base the expectation of a modern stationary state. Even in the technically advanced countries there is still a great deal of poverty (as in fact Boulding has

emphasized in the preceding chapters), the elimination of which will require huge amounts of new investment. Nor is there any indication that technological progress has ceased. Moreover, if the true cause of a reduced demand for investment goods were the community's preference for money balance, there is no reason why appropriate monetary and fiscal policies could not be used to remedy this situation.

It is, however, another matter to propose the use of the fiscal powers of the Government to offset all deflationary tendencies whether due to monetary causes or to nonmonetary causes, such as monopolistic practices, unsettled international or political situations. Once the economy had become saturated with liquidity (as would no doubt result from the attempt to use fiscal measures as a cure-all) sporadic inflationary conditions might easily develop.

Nor is it clear that the adjustable tax rates proposed by Professor Boulding would be an appropriate corrective for such an inflationary situation. Small upward adjustments in tax rates may merely serve to reduce the purchases of those primarily dependent on current income to finance their purchases but not of those who are in a position to supplement their incomes by drawing on past accumulations. Tax adjustments (of the kind necessary to stop inflation) may lead, therefore, to an inequitable distribution of product between various groups of income recipients. The situation would be especially complicated if the yield on Government bonds were stabilized—as Professor Boulding suggests (p. 215). Government bond holdings would then be as liquid as money balances.

Yet, for all this, Professor Boulding has written a remarkable book. The point of view from which it is written may be characterized as liberal, equalitarian, and international. The author's style is lively and lucid; his analogies, colorful and instructive. While one might wish that he had chosen to be a "middleman" for a somewhat less extreme position on the causes and remedies for unemployment, it must be admitted that he has succeeded admirably in accomplishing his purpose—that of presenting the major issues that lie before us in clear, understandable language suitable for the general public as well as for the first- and second-year college student.

E. T. WEILER

Board of Governors
Federal Reserve System

The Theory of Games and Economic Behavior, John von Neumann and Oskar Morgenstern. Princeton: Princeton University Press, 1944. Pp. ix, 616, index. $10.00.

Here is a work of utmost importance for all who earnestly seek to remove from the social sciences the atmosphere of vague description and generalization which has grown up about them. Not only have the authors succeeded in demonstrating that the mathematical theory applicable to games of strategy may be a useful (and in certain cases ideal) tool in the study of human behavior in economic and social situations, but, of even greater importance, they have made it unmistakably clear that progress toward a rigorous social science, as in the physical sciences, is apt to come only through a careful accumulation of exact knowledge first about familiar events and situations and later about the more complex and less obvious. They have reversed the method of attack used so frequently by economists and sociologists and instead of trying to build a mathematical system covering a complex segment of human affairs, or, as has sometimes been tried, one covering all man's activities, have been content to explore exactly a few simple and familiar problems. As a consequence of this modesty they have been able to develop a truly mathematical analysis of some simple problems and have pointed the way to exact knowledge of greater ones. Those who study their accomplishments will find them vastly more impressive than the former attempts at using mathematics in economics and sociology.

The development of the theory which this book presents has been in progress for some years. In 1928 von Neumann published the first phase. The present work brings into form the full theory and demonstrates its application. Seeing that the situations existing during games of strategy have many elements common to everyday economic and social situations, von Neumann applies the methods of point-set theory and topology. These methods enable him in Chapter II to set up a formal description of a game. Those familiar only with the usual attempts to use mathematics in economics and sociology which rest largely on the calculus of differential equations will immediately realize the uniqueness and great value of this new approach. The description of the game in exact terms, as outlined in Chapter II, demonstrates a method for analyzing social behavior in situations where each participant is dependent

upon the behavior of the other participants. This accomplished, it is possible to analyze such social factors as competition and cooperation, within, of course, the limits set by the method.

As the study progresses the rational strategy of the participants in various situations is studied and the pattern of behavior analyzed. Perhaps the most interesting conclusion is that in games with more than two persons, coalitions will generally appear. For economists dealing with various aspects of monopoly this is a conclusion of prime significance. The sociologist will also work this as the key to many of his problems. As the authors suggest, perhaps the first practical use of their work will be in the study of situations involving a few participants; for example, economic situations involving strong coalitions of trade unions, consumer cooperatives, cartels, etc. It is futile, however, to attempt prediction concerning the manner in which the theory of games will find its most fruitful use. This may come in the most unexpected manner. The explanation of economic affairs is still on a relatively primitive level compared with the older sciences, i.e., astronomy and physics. The authors foresee the difficulty of developing economics to a comparable level: "The importance of the social phenomena, the wealth and multiplicity of their manifestations, and the complexity of their structure, are at least equal to those in physics. It is therefore to be expected—or feared—that mathematical discoveries of a stature comparable to that of calculus will be needed in order to produce decisive success in this field. . . . *A fortiori* it is unlikely that a mere repetition of the tricks which served us so well in physics will do for the social phenomena too" (page 6).

Something should be said about the difficulty of understanding the theory of games. It is quite difficult to say just what level of mathematical knowledge is required to appreciate this work. Perhaps only an elementary level of training is required; but alone this will hardly suffice. A sympathy for mathematical reasoning will also be required. Whatever the case, an understanding of this work will repay the study. The first chapter, by the way, is an excellent essay on things economic and mathematical as they bear on each other and the progress of science, and can be enjoyed apart from the mathematical phases of the study.

ROBERT W. HARRISON

Bureau of Agricultural Economics

Wages of Agricultural Labor in the United States, Louis J. Ducoff in consultation with a bureau-wide committee under the project leadership of Carl C. Taylor. Washington: Bureau of Agricultural Economics, 1944. Pp. 193.

This volume is a milestone in the progress of the scientific study of farm labor in this country. Although studies of particular aspects of farm wages have been made in the past, this is the first attempt at a comprehensive survey of the entire field. The present study is also distinguished from earlier works by the volume of hitherto unpublished data drawn upon in reaching conclusions.

Mr. Ducoff and his colleagues begin with a general survey of American agriculture and its labor force, stressing the great concentration of employment indicated by the fact that more than half of the 1939 farm wage bill was paid on less than 5 percent of the nation's farms. A major motif running through the entire volume is the thesis that farm wage relationships to other agricultural factors are obscured if comparisons are made with data for all farms. Wage data must be studied against the background of information regarding "hiring" farms if meaningful deductions are to be made. This emphasis is a notable contribution to clear thinking in this field.

The second section of this study considers the structure of farm wage rates, the importance of wages as an expense in agricultural production, and the changes in wages over time in relation to associated factors. The most striking analysis in this section is that which leads to the conclusion that in 1939 farms having a total value of products in excess of $4,000 (the group of farms whose owners paid over half of the 1939 farm wage bill) paid wages which "were not anywhere near a level approaching the maximum ability of the farmers to pay wages." The significance of this conclusion for policy purposes is heightened by Glen T. Barton's analysis of ability to pay on selected types of family operated commercial farms which concludes that during a period such as the present conflict "farm wage rates, at least for the type of farm situations under consideration, can rise at a faster rate than farm prices and still be well within the limit of farmers' ability to pay."

This volume's discussion of wage rates in agriculture and industry, and of earnings and welfare of farm wage workers are excellent summaries of the available national and regional data

and emphasize anew the disadvantaged status of farm wage workers when compared with either the non-farm working population or accepted minimum standards of decent living. The penultimate chapter on wartime regulation of farm wages is a useful summary of government activity in an important field which has received relatively little attention.

In the concluding chapter's discussion of policy, the dependence of farm wages and agricultural income upon the health of the whole economy is stressed, and it is clearly implied that only if this nation maintains near full employment after the war can farmers and their employees hope to have satisfactory incomes and living conditions. Mr. Ducoff and his colleagues follow previous Department of Agriculture pronouncements by endorsing the extension of social security legislation to farm workers and the maintenance of an adequate system of placement services. They go further, however, and urge that "Realization of parity objectives for agriculture with other industries should also imply a parity of responsibility to pay and maintain adequate wages and other conditions of employment."

This reader would have liked to see included in this study some discussion of the reliability of available historical farm wage data and more explicit pointing up of the inadequacies which necessarily result from the paucity of statistics on piece rates and piece workers' earnings. As is well known, the current field study of farm wages being conducted by the Department of Agriculture is, in part, designed to remedy certain weaknesses in the structure of available wage data. Despite the omission of explicit discussion of the problems involved in evaluating the basic statistics, however, the present study is a very valuable contribution and should be of great aid to those concerned with farm labor problems at present and in the future.

HARRY SCHWARTZ

Washington, D. C.

Postwar Goals and Economic Reconstruction, Institute on Postwar Reconstruction, New York University, 1944. Pp. 304. $3.50, and *Postwar Economic Society*, Institute on Postwar Reconstruction, New York University, 1944. Pp. 305. $3.50.

These two volumes summarize the proceedings of the second and third series of conferences of the Institute on Postwar Reconstruc-

tion at New York University. The report on the second series of conferences, *Postwar Goals and Economic Reconstruction*, contains fourteen separate papers on widely different topics, including Enterprise in Postwar America by Leon Henderson, What Labor Wants After the War by Boris Sisshkin, How May Business Enterprise Be Expanded After the War by Gardiner C. Means, How Shall We Deal with the Public Debt by Alvin H. Hansen, American Trade and Foreign Investment by Calvin B. Hoover, as well as articles by Leverett S. Lyon, Benjamin Higgins, Mabel Newcomer, Thurman W. Arnold, Frank B. Jewett, Donald H. Davenport, William C. Clark, Eugene Staley, and Abraham D. H. Kaplan.

Agricultural economists will most likely be interested in Leon Henderson's article on enterprise in Postwar America, Alvin H. Hansen's discussion of the public debt, and Calvin B. Hoover's summary on American foreign trade. Mr. Henderson lists thirteen important questions which at the present time are unsolved or unsettled but which will determine the direction and security of enterprise in postwar America. Although he makes no recommendations as to how these problems are to be solved, he does suggest that we adopt a comprehensive overriding national policy so as to know in fairly clear terms whether or not we are to rely on free enterprise.

Mr. Hansen's discussion of his views on the public debt is an excellent summary of the frequently discussed "compensatory fiscal policy" idea which he explains is a "fiscal policy designed to offset the fluctuations that we are familiar with in the business cycle." Mr. Hoover's paper outlines some important problems to be faced in maintaining and expanding American foreign trade. With one or two exceptions, the paper presents a clear picture of the problems involved. The ways in which these problems are to be solved, however, are not so clearly defined. On trade barriers, for instance, he states that "the removal of such barriers, by European Countries in particular, depends first upon the creation and the maintenance of something approaching full employment in the important countries of the world."

The volume reporting on the third series of conferences, *Postwar Economic Society*, contains twenty separate papers on widely different topics, including Perspective in Postwar Planning by Fiorello H. LaGuardia, The Place of Cooperatives in Postwar Society,

by Roy F. Bergengren, Winslow Carlton, and Murray D. Lincoln, Organized Labor in the State by George Baldanzi, Education in Postwar America by Edwin S. Burdell, George E. Outland, and Lewis A. Wilson, The Medical Profession in Postwar Society by Dr. Morris Fishbein and Dr. Kingsley Roberts, Some Problems of Postwar Agriculture by James G. Patton, and War and Postwar Population Shifts in the United States by Warren S. Thompson. Other papers included are by Arnold J. Zurcher, Guy Greer, Mrs. Samuel I. Rosenman, Ira S. Robbins, Col. John N. Andrews, Gilbert H. Montague, Walter P. Hedden, and John E. Slater.

Brevity prohibits a critical analysis or even a brief description of the wide variety of subjects covered in these two volumes. In general, the various papers presented in brief outline the ideas of individual specialists relative to specific postwar problems. Although current events now lead us to suspect that some of the speakers have changed their minds in the few months since the discussions were presented, the two volumes do provide a valuable reference to the thinking of the period (1943–44). The editors, however, in selecting catchy eye-appealing words for the titles of the two books, have misled the prospective reader to some extent. The volumes could be more properly called the Proceedings of the Second and the Third Series of Conferences of the Institute on Postwar Reconstruction.

J. NORMAN EFFERSON

Louisiana State University

ACADEMIC FREEDOM*

LIKE all other freedoms, academic freedom is an institutional balance of mutual obligations and rights established between society and the individuals engaged in academic work. Its unwritten code rests upon the principle that neither party can shun anyone of its responsibilities and obligations without thereby reducing its own benefits.

Foremost among the implicit obligations resting upon academic people are intellectual integrity; a high standard of research, i.e., of search for the objective truth; self-critical awareness of the boundaries between well-founded knowledge and personal opinions and predilections; courageous but well considered and tactful expression of views; and a profound respect for the privilege of being entrusted with developing the knowledge, the abilities, and the character of the younger generation.

The most vital right concerns the freedom of the individual to obey exclusively his own conscience as the ultimate judge of his conduct in discharging his professional duties, his research, his teaching, his writing, and his other communications to the public. The academic man must be free from orders by others concerning the method or boundaries of research, the nature and extent of its results, or the means of making such results publicly available.

Academic freedom is as vital to society as the other civil liberties. It alone establishes the spiritual climate in which the human mind can advance man's finite knowledge and comprehension. It alone creates an atmosphere in which the noblest traditions in the search for the truth can be upheld and be handed from generation to generation.

Research and teaching in the social sciences is by nature more concerned with controversial issues than academic work in the natural sciences. These issues are controversial because they touch on the vital contemporary interests and conflicts of our society.

Agricultural economics has passed the stage where the advancement of knowledge was pursued chiefly by research in well defined, special compartments. It has matured sufficiently to emphasize increasingly the need for a synthesis of many lines of specialized research. Agriculture, like other parts of the economy, has become

* A statement by the Executive Committee, 1944.

a field of increasing public concern. Public policies and government programs affecting the interests of various groups and individuals in our society emerge from this concern. Consequently, like other social scientists, agricultural economists must deal much more than formerly with problems of controversy, in order to contribute to the development of wise and sound policies.

Occasionally academic freedom is impaired by default: some researchers allow improper respect for the source of the funds for their work to influence the scope of their investigations and findings. Others are so timid as to avoid contributing their share to the truth because they sense that their presentation runs contrary to the more popular assumptions. On the other hand, workers in our field, whether in private or public institutions of research and higher learning or in the service of federal and state governments, have been exposed to pressures from groups and individuals whose interests are involved in the research, teaching, and public utterances in agricultural economics. "Pressure groups" are one of the means by which modern political democracy functions. It is only natural that such groups will now and then make efforts to interfere with the independence of scholarship. Occasionally such pressure becomes truly inimical to intellectual freedom. It tends to impose harmful limits upon intellectual initiative and to circumscribe that liberty of research and expression which is essential to scientific standards and accomplishment. This has appeared in a number of cases in our field.

Violations of the covenant of academic freedom, however, result not alone from the activities of pressure groups. Academic administrators frequently impose less conspicuous but equally harmful limitations as a sort of precaution against the possibility of friction with certain influential factions in the public. Still other efforts toward the same end derive simply from an excess of institutional discipline and intellectual conformity.

The losers in the end have not in all cases—perhaps not even in a majority of cases—been the members of our profession whose academic freedom was temporarily impaired. Even economic pressure groups have a substantial interest in academic freedom. Frequently they turn to academic institutions for unbiased and objective research results which they can use as objective evidence before legislative, administrative, and judicial bodies, or as a basis for their own business decisions. If the integrity of research in any

academic institution, whether privately endowed or publicly supported, is violated, the institution in question loses its authoritative and impartial standing. Unfortunately, any infractions of academic freedom which undermine confidence in the objectivity and integrity of a research institution contribute to the loss of confidence in all institutions.

Therefore, even the intelligently interpreted selfish interest of economic groups requires in the long run the maintenance of full-fledged academic freedom. The same holds for the administrators of academic institutions. While certain curtailments of scholarly independence may temporarily yield some trivial conveniences, they are always extremely costly in the longer run. The best research minds, as a result of this loss of independence, drift away from the coercive institution, depleting its faculty and impairing its reputation. Enlightened administrators have never failed to view this inevitable situation with considerable respect.

The American Farm Economic Association takes cognizance of these dangers which become more acute in the emotional strain of these days of great national emergency. It solemnly reaffirms its belief in the need for protecting all institutions of research and higher learning, as well as the academic teachers and research workers, from any curtailment of their academic freedom. The Association refuses to function as another pressure group to champion the particular academic interest of its members, but appeals to them all individually to exercise constant vigilance against any violation of the unwritten covenant of academic freedom from either side. Its members should be guided by a high sense of responsibility as well as by unflinching civil courage whenever they observe or face situations of subtle or open coercion. Whenever a scholar in our vocation successfully upholds the dignity and the vital prerogative of freedom, all will share the benefits. Never must we compromise on the principles of this eternal heritage.

NEWS NOTES

The American Economic Association is undertaking an extensive study of the undergraduate teaching of economics and the training of economists through a considerable group of committees. The subcommittee on the study of economics in relation to education in agriculture is composed of M. R. Benedict, F. F. Hill, H. B. Price, T. W. Schultz and W. C. Waite.

M. A. Abrahamsen, Professor of Marketing, who has been on leave for six months with the Farm Credit Administration, returned to his duties at the University of West Virginia July 1.

J. B. Andrews who has been administrative assistant and associate professor of Agricultural Extension at the University of Illinois has been appointed professor of agricultural economics extension. Professor Andrews is one of the pioneers in the farm management work at Illinois, beginning in the cost accounting work in the Department of Animal Husbandry in 1912. He will manage a group of farms which belong to the University and also have general administrative charge of the Farm Bureau Management Service project.

W. W. Armentrout, Head of the Department of Agricultural Economics at the University of West Virginia, who has been on leave serving with UNRRA in Europe, will resume his duties at the University September 1.

M. K. Bennett, Executive Director of the Food Research Institute, Stanford, has resigned from his position as Chief, Food Allocations Division, Office of Food Programs, Foreign Economic Administration, as of March 31, 1945. He has returned to his duties at Stanford, but continues in the capacity of Consultant to the Office of Food Programs.

Reed H. Bradford, Associate Rural Sociologist, who has been on military leave for two years, has returned to his duties in the college and Agricultural Experiment Station, West Virginia.

R. P. Callaway, who has been with the War Food Administration for the past three years, has been appointed Associate Professor and Marketing Specialist in the Department of Agricultural Economics, Farm Management and Marketing of the University of Maryland.

F. D. Cornell, Jr., Acting Head of the Department of Agricultural Economics, has been appointed Assistant Director of Agricultural Experiment Station, West Virginia.

Phil S. Eckert, Agricultural Economist of the Federal Reserve Bank of Cleveland, has accepted a position as Professor of Agricultural Economics at Montana State College effective July 1, 1945.

J. Rudolph Ferrell, recently with the Division of Farm Management and Costs, B.A.E., has transferred to the Agricultural Adjustment Agency, with headquarters at Washington, D. C.

Paul L. Fletcher has joined the Economics Section staff of the Extension Service of the United States Department of Agriculture as Senior Extension Economist, in charge of Livestock, Wool and Grain Marketing.

Raul Garcia, of the University of Cordoba, Argentina, has been a visiting scholar at the University of Minnesota during the past year. During the coming year, he will visit a number of institutions throughout the United States.

Trimble R. Hedges, who is at present on military leave serving in the Navy, has been appointed Head of the Department of Rural Economics and Sociology in the University of Arkansas College of Agriculture. Dr. Hedges succeeds Dr. C. O. Brannen who has been Head of the Department for the past 20 years and who now is Director of the University Bureau of Research.

T. G. Hornung, formerly with the Livestock and Meats Branch of the Office of Marketing Services, has recently joined the staff of the Economics Section, Federal Extension Service. Mr. Hornung's new duties will have to do with the economic aspects of the Farm Labor Program. He will work with state economists and the personnel of the Economics Section on problems related to labor utilization.

Homer L'Hote, who has been an instructor in the Department of Agricultural Economics and recently an Assistant to the Director of the Experiment Station, University of Missouri, has accepted an appointment in the Rural Electrification Administration as economist and assistant to the Director of Research. He will devote his time to the conduct of research among farmer groups related to the establishment of additional electrical service among farmers.

Percy M. Lowe will return to his position as Instructor in Agricultural Economics at the University of Minnesota on September 15 after a year's leave of absence. During his leave Mr. Lowe has assisted in the rehabilitation of blinded war veterans at Avon, Connecticut.

Carl C. Malone has been acting as regional farm management specialist for the North Central States for the Extension Service of the United States Department of Agriculture, taking the place of Luke M. Schruben, now serving in the Navy. He has been farm management specialist at Iowa State College for many years, and will return there shortly.

Stanley F. Morse, agricultural consultant since 1916 with private practice in the United States, Latin America and Europe, and previously State Director of Agricultural Extension and Professor of Agriculture at the University of Arizona, is Chief of the American Food Mission, U. S.Foreign Economic Administration, to French North Africa. Mr. Morse also has been serving as Chief of the Food Divisions of the North African Joint (Anglo-American) Economic Mission.

Alvah L. Perry, Assistant Agricultural Economist in the Maine Agri-

cultural Experiment Station, has resigned to take up potato farming, Aroostook County.

Wade Rice, who has been Extension Poultry Husbandman at the University of Maryland, has been appointed as Poultry Products Marketing Specialist in the Department of Agricultural Economics, Farm Management and Marketing. He will be in charge of all Maryland Fresh Egg Law work and such activities as are specifically related to the grading, standardization and marketing of poultry products.

C. E. Stockdale, formerly with the AAA has been appointed Associate Agricultural Economist in the Agricultural Experiment Station, West Virginia.